

The Commercial Car Journal

VOLUME XXVIII

PHILADELPHIA, JANUARY 15, 1925

NUMBER 5

When You Put Through

A Sale Without a Profit *for Yourself*

DO YOU CALL IT A SALE?

Do you prefer to make five hundred dollars profit on each sale or is it better to make this profit as a result of six sales? Such a question, on the face of it, seems absurd. But is it really so ludicrous? Consider. With quite 70 per cent of our dealers today the sale's the thing. As long as trucks are being sold business is being done. Why worry.

The average life of the smaller dealer, for the past year or two, has averaged something under twelve months. Why? Because they have let the bigger capitalized firms set the pace for them. In the race for sales they have thrown overboard discounts with reckless ardor, and paid fabulous prices for useless junk.

Every trade-in means two sales before the profits, if any, can be determined. It costs pretty near as much to sell a used truck as a new one and there is usually very little to be made out of the service to the old truck afterwards. Yet how often is that taken into account? Because the trade-in vehicle eventually brings what was allowed for it, the deal is called an even break. What about the overhead, the storage, the salesman's time and commission, the cost of the demonstration? No wonder the dealers go out of business. If they but knew it they have never been in business.

Too Much Credit

Look what happened in the buggy-building business a score of years ago. The backbone of the business was the small manufacturer turning

out 2,000 to 5,000 buggies a year. The bigger manufacturers got together and decided to put the small men out of business. The first item on their program consisted of selling their products on time payments. In the beginning they offered 30 days, but this did not seem to have any notable effect on the trade so they increased it to sixty and again to ninety days. To make a long story short, they succeeded in capturing the credit business for themselves, leaving the cash trade for their opponents. Finally in a very short time it was the bigger manufacturers who had gone to the wall, killed by their own weapon —poor selection of credit risks.

No man would permit his competitor to come in and run his business for him, so why let competition drive him into unsound business methods that can have but one ending? Sound business methods firmly adhered to always paid and always will pay, always providing that there is a market for one's products. As far as the truck industry is concerned demand was never better. The business is there to be done, and there is business enough for everybody without the adoption of cut-throat tactics. Those who permit themselves to be coerced into uneconomic measures in order to maintain some arbitrary turnover, will find, sooner or later, that such measures can have but one end—disaster.

If one is to be scared into suicidal methods by the "wild-cat" selling operations of other concerns, one might far better close down business right away and get out while the getting's good. So much for what not to do.

There is No Other Way

That motor truck selling is a profitable business for the smaller dealer if properly conducted, there is not the shadow of a doubt. Dealers who have been at the business a decade and over, and are still keeping their end up (and there are plenty of them) can testify to that.

But it means sticking to sound business methods, and in this the smaller firms have equal chance with the larger.

It means sticking to the legitimate profits.

It means confining your time payments within reasonable limits.

It means careful selection of your hire purchase creditors.

It means common sense allowances on trade-ins.

Cash in the bank instead of in the pocket of some fly-by-night operator can very well be used in cultivating this type of business. In other words, **conserve your capital for the normal demands of your business instead of loaning it out at 6 per cent to anyone who fancies there is easy money in the truck operating game**, and who in many cases constitutes nothing more than another bad debt.

It is not of course suggested that all purchase on terms is to be discouraged. Some of this busi-

ness is inevitable but it must be emphasized that considerable discrimination in its application is called for, and the longer the term asked for the more dubious the prospect. The question that should be asked before a deal is made is not "Can I get this business by hook or crook?" but "is this business worth while when I've got it"?

Every Deal a Profit

Everyone knows how it goes against the grain to pass up business, but it must also be remembered that much of the business being done today is far too one-sided to be called business. The only man who gets anything out of it is the purchaser, but if the dealer knows his job even the buyer does not come off scot-free.

The prospect who is at heart a business man will soon figure up what the accommodation of time payment costs him in interest and extra insurances, and free himself of those obligations as soon as possible. At any rate it is worth the salesman's while to point this out to him.

The coming year promises very well indeed for the truck selling business, and those who do not get their share of it will only have themselves to blame. The only way however to insure success is to see that every deal carries its own legitimate and proper profit, even at the cost of fewer sales.

Whereas: Motor Truck Selling is a Profitable Business.

Resolved: That sound business methods will be religiously adhered to.

That the making of a legitimate profit is the purpose of business.

That time payments will be confined within reasonable limits.

That, above all, common sense allowance on trade-ins will be rigidly abided by.

A Real 1925 Resolution Suggested for Any Dealer Who Thinks That He May Need It

More Roads Mean More Business

Expansion of Highway Program Helps the Dealer by Extending the Use of the Truck and Cheapening the Cost of Operation

By H. LIONEL WILLIAMS

WHAT the Highway Engineers of the country are doing to promote the use of motor transportation was made clear at the recent convention of the American Road Builders' Association, at Chicago.

Every truck that travels over an improved road costs from one to four cents a mile more than it would on a hard-surfaced highway. The cost of the highway is but a fraction of the money its use saves the operator. Therefore the dealer located in a district where good roads are the exception rather than the rule has a harder row to hoe than his more fortunate brethren.

Unimproved roads are however decreasing because it is becoming more generally realized by the transport user, both automobile and truck, that it pays to have good roads. The gasoline tax which is acknowledged to be one of the most equitable means of raising funds for the building and maintenance of roads, is becoming universal in this country. At the present time there are only ten states that have not adopted the gasoline tax. These are New York, Massachusetts, Ohio, Michigan, Illinois, Wisconsin, Iowa, Minnesota, Kansas, and Nebraska. The remaining states collect taxes of one to four cents per gallon.

As one of the speakers, Thos. H. MacDonald, Chief of the Public Roads Bureau, explained, the first duty of the Highway Engineer is to make possible the general flow of traffic throughout the country. This accomplished they can begin to develop the local areas more intensively. This is the plan now being followed, with the expectation that the initial system of roads will be complete in about ten years' time. The more intensified system, it is anticipated, will occupy another fifteen years. The fact that a road is classed as "improved," he pointed out, is no indication that it is in a condition to handle the requisite amount of traffic. In practically every case an artificial restriction is placed upon the carrying capacity of the road, reducing its efficiency to about one-fourth. One cross road will often cut down the carrying capacity fifty per cent. The ideal condition exists where a free flow of traffic is possible at all times without interruption.

Traffic Analysis

It is of fundamental importance to know what we are building the roads for, pointed out W. H. Connell, of the Pennsylvania Highways Dept. The purpose

of highways surveys is to determine the future needs of highway traffic. Changes in industries and populations are indicated by present trends, and traffic tendencies as revealed by periodic censuses indicate future probable demands.

Where this planning is not carried out, economic waste results, as has happened so often in cities where allowances had not been made for future development.

A uniform type and size of road would increase economic waste because the highway would be too large for some and too small for other traffic demands.

Such surveys are now becoming universal. One of the facts that has been discovered is that very heavy traffic occurs only near large centers of population, also, contrary to popular impression, the proportion of through to local traffic is very small.

In Pennsylvania, for instance, 92 per cent of the traffic is local and 8 per cent through or interstate, while 30 to 40 per cent of the passenger car traffic is being utilized for business purposes.

Tests have also shown that trucks form only ten per cent of the total traffic by volume, while trucks of a gross weight exceeding 18,000 lb. form only 9 per cent of the truck traffic, those of 24,000 lb. gross weight and over constituting but one per cent of the total.

Scope Varies According to District

All roads of equal size are not necessarily equally important. Further, conditions on the same highway may vary considerably according to the locality, as witness the stretch of the Lincolnway passing through Pennsylvania. The average traffic flow on this highway near Philadelphia (pop. 2 millions), is 6,852 vehicles of which 778 are trucks. Of these trucks, 86 represent loads of 21,000 lb. or over. Near York (pop. 47,512), 90 miles away on the same highway, the average daily traffic is only 3,042 vehicles, of which 466 are trucks, with 19 of the trucks weighing 21,000 lb. or over.

Then compare the Lincolnway with the Roosevelt Highway, also in Pennsylvania. There is 83 more miles of the Roosevelt Highway, but the population within the ten miles bordering it is only 650,000 as compared with 4½ millions bordering the Lincolnway. This shows how the characteristics of even national highways can differ.

An even more striking comparison is offered by the differences on the Lincolnway between Philadelphia and Coatesville,

and on the Lakes-to-the-Sea Highway between Erie and Meadville. On the Lincolnway the average truck traffic is 270 vehicles per day, while the Lakes-to-the-Sea Highway is only called upon to carry an average of 71 trucks a day. The difference in the quality of this traffic is shown by the table:

	Lincolnway	Lakes Highway
Under 6,000 lb.	99	22
6-12,000 lb.	73	17
12-18,000 lb.	49	11
Over 24,000 lb.	22	10

Development of Motor Transport

Professor Arthur H. Blanchard, of the University of Michigan, was very optimistic about the bus situation. From the present congestion of streets in the business districts, and the tendency for this to become more pronounced as time passes, he argues that eventually automobiles will not be allowed to park on the city streets. This will open the way for a service of de luxe buses operating from the residential districts and over the city streets. This would obviously reduce congestion and increase the efficiency of the business vehicles operating in the city area.

During the next ten years, he forecasts the fuller economic utilization of highway transport by electric and steam railroads. Railroad officials, he averred, are just beginning to recognize the advantages of motor transport.

One speaker went even further than this in suggesting that within 25 years all highways of any size will have over-and-under crossings doing away with grade crossings, and that commuting from suburbs to cities will then be almost entirely by motor bus.

At the present time 168 electric railways use buses, 33 railways use short-haul trucks, and 9 use motor vehicles for terminal transfer. All these are due for great expansion. Railroad officials have stated that no more electric branch lines will be constructed, while 174 railroads are already using gasoline rail motor coaches on branch lines.

The immediate highway programs are opening up rural districts at a rapid rate. The farmer is no longer content with a main highway a mile from his door. He must have a hard surface from his gate to his market, and as his wish is fulfilled so will he come to realize to the full the benefits and advantages of motorized transportation.

Special Truck Week Boosts Business

Six Different Types of Commercial Bodies Were Shown. Show Effort More Than Paid for Itself

OUR trucks sold off the floor and inquiries enough to keep their four salesmen busy for several weeks were the satisfactory results secured from a special truck sales week, by a suburban firm of automobile dealers, in a district of about 60,000 inhabitants. They are still cashing in on it.

As a method of uncovering prospects, Caley Bros., of Roseland, Chicago, the local Chevrolet dealers, consider the special truck show without equal. So much so that they have decided to make it an annual event.

Although they have sold trucks alongside automobiles for a number of years, the special truck show which they held at the beginning of November was their first attempt at establishing themselves publicly as real truck dealers, providing ade-

quate truck service. The fact that they sell automobiles as well is apt to give the impression that trucks are merely a side line. The Show corrected this impression very effectively.

Organizing the Show

For the Show week all the passenger cars were cleared out of the showroom, and six different types of commercial vehicles staged, all on the Chevrolet chassis. In addition to H. G. and W. C. Caley, the partners, each of the outside salesmen was given a day inside.

A few days previous to the opening of the Show, 12,000 circular letters of invitation were sent out, and these were backed up by a quarter page advertisement in the two local weekly newspapers. Everything was not plain sailing however. No

sooner was the Show opened than workmen began excavating the street in front of the premises, preventing prospects from getting any nearer than a couple of blocks with their cars. However, Caley Bros. profited from this misfortune by selling a dump truck to the excavating contractor.

If further evidence were needed that circularizing pays, the Show provided it. Normally Caley Bros. send out 2000 circulars a week, and they are very satisfied with the response. The fall they consider is the logical time to concentrate on truck sales, and the Show introduces the change-over admirably. They have at all times, however, a truck on the floor.

Close track is kept of all sales by means of a map on which each sale is recorded by means of a colored



Speedy Deliveries
for Economical Transportation

ECONOMY GROCER

CHEVROLET

You Are Invited To Attend
OUR FIRST
MOTOR TRUCK SHOW

Oct. 27th to Nov. 1st, Inclusive
8 A.M. to 9 P.M.

AT OUR SHOW ROOMS
10638-40 Michigan Avenue

CALEY BROTHERS

Pullman 7318-7319



HARRY G. CALEY

PULLMAN 7318 - 7319
for Economical Transportation

CHEVROLET

CALEY BROTHERS
SALES - SERVICE - PARTS - ACCESSORIES
AUTHORIZED DEALERS
10638-40 MICHIGAN AVENUE
ROSELAND
CHICAGO, ILL.

COME TO OUR
TRUCK SHOW
OCT. 27TH TO NOV. 1ST
AT
10638-40 MICHIGAN AVE.
Open from
8 O'CLOCK IN THE MORNING
8 O'CLOCK IN THE EVENING

The ever increasing demand for the Chevrolet Trucks in this Community warrants us to show a complete line. Therefore, starting October 27th, to November 1st, for one week only we will devote our entire Show room to the displaying of Trucks and Truck Bodies. It will be a splendid opportunity for you to look at any type of Chassis or Body you might be interested in.

Please accept this as your invitation to come.

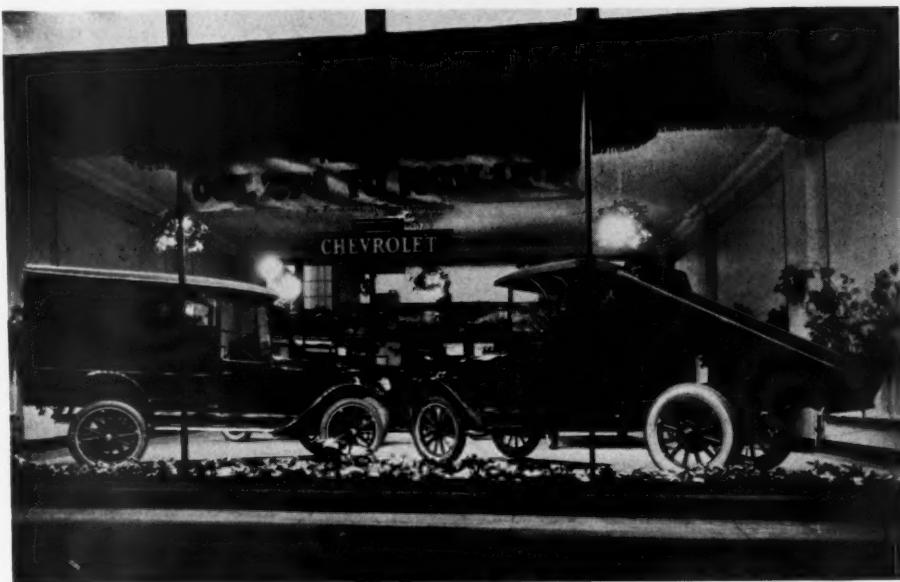
Yours very truly,
CALEY BROTHERS

How the Show Was Announced

pin. A glance at this map shows the distribution of the sales, blank areas suggesting the need for extra effort on the part of the salesmen.

Unlike a good many passenger car and truck dealers, H. G. Caley does not believe in peddling trucks. He believes in selling transportation. As a commercial vehicle expert himself, he makes it his business to investigate the problems of new prospects before endeavoring to sell them a truck. That is why their customers stay sold on Caley Bros. as well as on the trucks that Caley Bros. sell.

This Shows What an Affectionate Display Can be Made With Trucks and a Little Foliage.



Gramm & Kincaid Sponsor New Motor Truck Company

GRAMM & KINCAID Motors, Inc., of Lima, Ohio, is the name of the new motor truck company just organized by Mr. B. A. Gramm, who has resigned the vice-presidency of the Gramm-Bernstein Motor Truck Co., and Mr. R. M. Kincaid, who resigned as vice-president of the Garford Motor Truck Co.

Mr. B. A. Gramm's record in the industry dates back many years. He built his first truck in 1901 and since 1906 his production was exclusively motor truck. He is a devout disciple of the commercial car. In 1911 he located his plant in Lima, moving there from Bowling Green, Ohio. During the war Mr. Gramm was engaged in building Liberty trucks for the government. His plant and organization built the first heavy duty standardized truck for the army, which was known as the Class B Liberty. For his co-operation with the War Department, he was presented a distinguished service award. Mr. Gramm has been an active member in the Society of Automotive Engineers for the past twenty years and is regarded as one of the real outstanding pioneers of the industry. He will head the new company as president and chairman of the Board of Directors.

Mr. Kincaid, a firm believer of the importance of motor transportation in its relation to industrial and transportation expansion of the country, is eminently qualified by training and experience to shoulder a big part in the development of the Gramm-Kincaid Motors Co. He first entered the industry as an apprentice, advancing until he

became a master mechanic in 1912 with the Chicago and Eastern Illinois Railroad. As assistant to Walter P. Chrysler, Mr. Kincaid entered the automotive field, where his achievements in economical practices in production first became known. These practices, a great many of which are still adhered to, have always been in the form of specialized effort toward the development of high production at low cost.

During the war he entered the Curtiss organization where he helped turn out fighting planes for the World War. Later he was associated with the U. S. Light & Heat Corp. and finally came to Lima, Ohio, early in 1924, as assistant to the president of the Garford Motor Truck Co. While here by reason of this success in advancing improvements in design and in the extension of international distribution, he soon became recognized as a leader in the commercial car field. Before his resignation

Mr. Kincaid was vice-president and general manager of the Garford Co. He is an active member of the American Society of Mechanical Engineers. In the new organization he will be vice-president and treasurer.

Through the collaboration of these two capable men, widely recognized in the industry by proved ability and achievement, the introduction of a line of trucks that will establish new standards should be a natural sequence. A better team could not have been formed; one member brings the wealth of experience obtained through the conspicuous part he played in the fundamental development of motor truck construction from the pioneer days down to the present time; the other, a genius in production, will provide scientifically correct and economical production. It is expected that the product of these two men combined with a very forward, thought-out merchandizing plan and service policy will cause truck buyers and dealers throughout the country to await further announcements with considerable interest.

The new company starts not only with a clean slate, but many of the ideals which Mr. Gramm has long expounded in the motor truck business will be put into effect in connection with the development of the new company. No definite information will be released at this time but the fundamental ideas which form the background of the new company are summarized in the words of Mr. Gramm when he said:

"There must be less investment in inventories, a greater turnover of invested capital, a lessening and simplifying of models, a far greater saving in the service end to the user, and above all, a fitting of the truck to the user's business, instead of the business to the truck."



B. A. Gramm



R. M. Kincaid

Why I Have to Stop Selling Trucks

"Sold Four Trucks the First Week I Was a Dealer. They Thought I Was Wonderful, But—"

By "LIST PRICE BILL"

IHAVE to stop selling trucks immediately. Why? Just because I am getting a bad name with some of my customers and the news is getting around to everybody."

"Cutting prices is what caused all the trouble. And when I say trouble I mean trouble, bad tidings and sad news. Everything was O. K. until I took on trucks as a side line. Say, when it comes to worry, selling trucks the way I did is worse than starting down a mountain and finding that your foot brakes are gone.

"I had a nice business, garaging and repairs and a good line of passenger cars. Then I thought, why not take on a line of trucks. Some of the same people I am selling cars to need trucks. Kill two birds with one barrel, what? Nice discount, I figured, no trade-in every year because the color of the upholstery is changed or the lighting switch is changed to the other side. Yes boy, me for trucks.

Pops Up Like a Magic Rabbit

"The wholesale man comes in just about that time. Funny isn't it. Think of buying something and the guy to sell it pops up like the rabbit in a magician's hat. Wonderful talker that fellow. Made me think that every day I went without selling his line of trucks I was robbing the missus an' the kids of just that many dollars. 'Truck selling is the real opportunity' he says. 'Just look at the trade-in problem he goes on. On our big job there is \$1,000 for you to play with. If a prospect wants \$200 or so more than you want to give him in trade for his old relic, take him up. You have \$1,000 leeway and stand no chance to lose! Sounds good to hear it that way, doesn't it?

"Well I signed up for the line and went ahead. Put up a sign, busted out with a few ads and I was a truck dealer. Thought so anyway. Good thing I didn't know what was ahead of me or I would have stalled my engine before I started that truck business.

"In a few days I found out that when it comes to knowing the truck selling game some of the truck owners could give me a week's start and then beat me to New York crawling. I breeze in and start selling trucks to a prospect. The man looked bored and acted twice as much that way. After awhile I get a rise out of him. 'What's the price?' Five thousand dollars to be exact is my answer. 'List yes, I know that. I read the papers' he comes back 'but how much to me?' 'Why how much to me?' I asks. 'Contact off' he says. 'I don't pay list price to nobody. Been three salesmen in to see me today. Everyone offered me something off. I like your truck, might buy three.'

"Well sir I was reaching for the order book and thinking maybe the missus could have that fur coat. But he brought me up with the back wheels sliding with his next crack. 'I'll give you \$3500 and one old truck for each new one and take four at that figure.' and then he stopped.

"Comes to hanging crepe on a proposition I nominate that guy for president for life. \$3500 and one old truck for each new one. One old truck traded in for \$1500 and its worth maybe \$500 to a bootlegger stuck on the road and the cops coming and worth about \$150 to anybody else.

"So I spoke to him just about that way. That there was nothing to it for me selling trucks that way. I would not make a nickel on the sale.

"I know you won't make anything on it," he says. "I don't expect you to make anything on them. But look what a selling point it will be for you to say you have sold me four trucks. It will give you a good start with the company too. Four five-ton jobs right on the start. Worth thinking about.

This story is not the result of some writer's imagination, but is based on an actual interview by a member of our editorial staff. For reasons that are very obvious the dealer in question did not want his name mentioned. Undoubtedly many more dealers have had this same situation happen to them. Doing business this way certainly does not pay.

"John. You already know the answer. I wrote down the order for four trucks and became the future owner of four mechanical misfortunes that were no good the day they were made and got worse and worse as time went on. On the money end I was just breaking even if I got junk prices for the relics.

"Sold four trucks the first week I was a dealer. Wholesale man thought I was wonderful. If he had been a general giving out medals I would have had a chest full.

"Well things went along for quite awhile. I was learning all the tricks of the game from the buyers. There wasn't anything they had overlooked. Believe me John, if I had only a \$1,000 to buy the advertising rights on the moon I would get one of my prospects to put the deal over.

The Prize Package

"I won't bore you with a history of my business from that time to this but wait till I tell you the deal that finished me with selling trucks. One day a fellow

came in here and asked to see the five-ton job. I showed it to him and gave him the usual breeze about the car. Five bearing crank—full float—42 to 1, overhead and all that. Saw in a minute or two that he wasn't making the grade with my talk on details. Sounded him out a little and find that he doesn't own a truck, never had. Wanted to take a hauling contract a friend had put in his way. Joy and rejoicing I says to myself. Here is the prize package. A bird ready to buy a truck and no trade-in.

"How much is the truck, completely equipped and delivered with the details as you have specified?" he asks me.

"\$5000 plus freight and tax \$5367.89. I answers and then, course you won't believe it but he says 'I'll take it!' Don't ask for a discount, has no junk, pays list price without batting an eye.

"Soon as he got out of the place I did a hand spring and galloped to the phone to spread the joyful news to the missus. Got one at list price at last I said to myself over and over.

"Well I delivered the truck and got the cash and the notes which were good as gold and in a short time the cashier enters the dope on the pass book and I am over a thousand berries to the good.

And the Storm Broke

"You can't see why that made me quit the truck business. Kinda sad making one thousand slugs you think. Just a minute John. Everything went fine for a few weeks, then one day the thunderstorm broke. That bird comes in here with fire in his eye and concealed loud speaker in his throat. He looks mild but boy I am here to testify that when it comes to giving a man a calling down he has got the world stopped. And he went after me for fifteen minutes without coming up for air once. Robber, cheat, thief, jailbird were just the mildest things he called me. Finally I got a word in and asked what it was all about and what had caused the earthquake.

"Didn't take him long to tell me. He had talked to the fellow I sold the first four trucks to. They got to pow-wow about trucks and the first guy asked him how much he paid for the truck. And of course, he answered 'List price' just like a gentleman. Then the first customer of mine explains all about the junk trucks traded in at \$1500 each and gives the last owner the merry ha! ha! That didn't satisfy the last customer. He is a thorough guy—I'll say that for him. He went to several of my customers and found out just what kind of a deal each one got. Well the first guy made the best deal and the last one was the only one who paid

(Continued on page 58)

"Time" Sales Methods Important to Buyer and Dealer Alike

How Misunderstanding May be Avoided by a Knowledge of Partial Payment Methods

By EDMUND B. NEIL, B.M.E.

MISTER DEALER! Are you entirely satisfied when you close a deal for a truck to be paid for on "time"? If not, you will increase your confidence and mutual business friendship by studying the following resume of "time" sales methods and the calculations involved when a motor truck is sold on a partial payment basis.

The principle of the "time" sale is nothing more than the granting of credit to the erstwhile buyer and the retention of notes or other evidences of indebtedness by the seller of the goods.

The same principles which are applicable to credit determinations in a general way may be applied to motor truck sales as well as to the many other forms of purchase wherein the character and integrity of the purchaser and his financial ability form the essential prerequisites of successful and mutually satisfactory sales.

Any business negotiation, however small, must represent the transfer of some capital, for unless the purchaser possesses sufficient capital to enable him to conduct his business without becoming too deeply involved in debt, he of course cannot succeed.

Partial Payment Idea

Since the success of the whole plan revolves around the desire of the seller to increase the sales of his products by appealing to a market with a lesser amount of capital, and the desire and willingness of this market to develop and determine its own destinies through the legitimate use of borrowed capital whereby it may do business, there is no reason why the whole partial payment idea cannot and should not be placed upon the highest standard of ethics and business procedure.

Unfortunately, this is not always the case. There are far too many buyers who seem to think that because they are under obligation to the seller for the payment of just indebtedness, they can take undue advantage of the seller; and on the other hand, there still are many sellers or dealers who thoroughly justify the purchasers' opinions of them by the manner in which they conduct their "time" sales business. The presentation of the principles involved should therefore be of value to both.

Since these conditions seemingly exist today, it is believed that a careful study of the basic principles underlying sales made on a conditional basis may be of value to both.

Fundamentally the "time" sales idea may be divided as follows:

- No. 1. The purchaser should pay to the truck dealer the largest amount of capital which he can afford at the time the initial deal is closed.
- No. 2. This capital should cover all the expenses involved in conducting the transaction, and should be sufficient to protect the dealer against loss in case repossession of the truck is necessary at any time.
- No. 3. The dealer is justly entitled to a fair rate of interest on the outstanding capital given as a credit to the purchaser in the form of his monthly notes.

Let us now carefully consider each of these fundamental points.

The initial transfer of capital represents the "down" payment made by the purchaser to the dealer at the time of delivery of the vehicle. The actual amount necessarily depends upon the type of vehicle involved in the transaction, the profit which the dealer must make on the sale, and upon a third factor too often lost sight of in transactions on a "time" sales basis.

The risk involved is mutually important to dealer and purchaser, for the dealer must assure himself that he cannot lose in the transaction, and on the other hand, unless the purchaser risks a sufficient amount of his own capital to make it of vital importance for him to successfully operate his truck, his interest in making a success of his business is likely to fall below par, with the result that eventually the dealer must step in and repossess the truck.

Used Truck Greater Risk

Present sales conditions indicate that the amount of initial payment should be at least 20% of the gross amount of the sale, and preferably higher. This is particularly true if a used truck is sold in place of a new vehicle, for in such cases the risk is naturally greater particularly for the dealer, since the established character of the purchaser is more likely to be open to question.

The truck purchaser may argue that he is not so sure that his used truck will perform satisfactorily, hence he may not wish to risk so much as an initial payment, but it must be remembered that he can assure himself regarding this by deal-

ing only with responsible concerns who are in a position to stand back of any used truck which he purchases.

From the dealer's angle the **initial payment forms a very important item** in the entire transaction. Unless a substantial initial payment is made he cannot long continue in business, for while he may have a large amount of capital he cannot continue to extend credit to truck purchasers without "freezing" the money which he must have to operate his business successfully.

It is for this reason that many dealers find it necessary to call upon the services of reputable financial organizations.

But just the same the dealer stands to lose if the transaction is not conducted in a businesslike way, for not only may his own credit with the finance company become impaired but also he may have a used truck to dispose of at a loss.

It is equally important that such items as insurance on the truck, taxes, etc., be covered by the initial payment, for if they are not, a still greater advance of capital must be made and the amount of the notes carried by the purchaser increased, which as mentioned later, is probably one of the fundamental causes why so many "times" sales nowadays finally end to the dissatisfaction of both dealer and purchaser.

How to Explain

Mr. Dealer, how often have you heard the question asked by a purchaser—"Well, are you charging me a fair amount of interest, or are you doing the same as some of our 'dollar down' companies do in pyramiding the total interest I must pay?"

And how can the purchaser protect himself against any unfair practice in determining the amounts of his notes?

The answers to both these questions involve a consideration of methods of calculating interest. For convenience let us classify the ordinary methods into four classes:

- No. 1. What may be called the "average rate" method.
- No. 2. The "interest on note" method.
- No. 3. The "bank rate" or "interest on unpaid principal" method.
- No. 4. Combinations of these three methods.

The easiest way to point out the differences between these methods is to take a specific example:

Let us assume that the total price of the truck itself is, say, \$4000, which includes all the equipment, body, etc.—in fact, represents the cash price of the truck. Let us also say that 25% of this, or \$1000, covers the initial or "down" payment, leaving a remainder of \$3,000 to be covered by notes. For the present we will forget about taxes and the other items and assume that this amount of \$3,000 is to be paid in full within fifteen months, or at the rate of \$200 per month if no interest was to be included.

Now, assuming that the legal rate of interest is 6% per annum, we multiply the interest rate by the principle sum (\$3000 x .06), and find that in accordance with method No. 1, or the "average" rate plan, the interest per year would be \$180, and for the fifteen month period (1 1/4 years) it would be \$225. Dividing this interest by fifteen months we have the amount of \$15 per month to be added to the original amount of each note and arrive at the total of \$215.

This method of calculation is in most cases legal, but let us investigate further: Is it entirely fair to the truck purchaser?

In the first place, banks and financing institutions can loan money on a monthly basis and can accordingly receive payment for indebtedness in the same way. Thus we see that interest can be determined by months and not on a "per

writer has reference to as the "dollar down" companies.

However, the practice is slowly becoming obsolete; and concerns operating on sound business principles are following one or the other of the two systems mentioned later.

The unfairness of this "average" rate method will be readily seen when we consider these two.

The second or "interest on note" method is one which was followed by one of the large truck and car manufacturers for many years, and is as follows:

Difference of \$105

Assuming that we use the same figures as before, but instead we think particularly about the note itself, we calculate the interest on a monthly basis. Interest at the rate of 6% per annum means interest at 1/2% per month. Now, each month a certain amount is paid by note, the total of which at the end of the time payment period equals the principal sum of \$3000. This can be made more clear by a brief tabulation of the payments as in Table "A."

Note that the interest in this case is but \$120, whereas in the former case it was \$225 for the total 15 month period.

We will now consider the advantages and disadvantages of this second system of calculation. We believe that it is ob-

viously fair to both parties insofar as interest itself is concerned, for the payments as made are deducted from the amount due and interest determined on the monthly balance.

But notice also that the amount of the notes increases each month. While this may be an advantage to the truck operator in that as the earning capacity of his truck increases he pays the larger notes accordingly, it is not entirely fair to the dealer.

Why is this true?

When the truck purchaser buys his truck he in reality borrows money from the dealer or finance company, and consequently should owe him the largest amount of interest at the start, with the amount of borrowed capital bearing interest slowly decreasing as the notes are paid. Thus, to be fair to the dealer, the purchaser should pay the most interest at the start and not toward the end of the time payment period.

In other words, he should pay interest on the "unpaid principal" method and not upon the total value of the unpaid notes themselves.

Then there is another disadvantage to the dealer when interest is calculated on this basis: If it should become necessary for the dealer at any time during the "time" payment period to "take back" or repossess the truck, the seller loses the largest amount of interest and hence suffers a net loss, since he must procure his money from his bank or finance company on what may be termed the "unpaid principal" method.

While this is obviously an advantage to the purchaser in cases of this kind, it can hardly be considered entirely fair to both parties, since the dealer loses an amount to which he is justly entitled.

TABLE "A"

Month	Note	Interest	Total	Remainder Due on Notes
1	\$200.00	\$1.00	\$201.00	\$3,000.00
2	200.00	2.00	202.00	2,800.00
3	200.00	3.00	203.00	2,600.00
	etc.	etc.	etc.	etc.
Up to 15	200.00	15.00	215.00	200.00
	\$3,000.00	\$120.00	\$3,120.00	

annum" basis, even though the total legal rate may be stated as 6% or 8% or whatever it may be.

"Average" Method Obsolete

This "per annum" or "average" method of determining interest is still used by many concerns selling goods on a "time" sales basis, particularly those whom the

TABLE "B"

Month	Note	Interest	Total	Remainder Due on Unpaid Balance
1	\$200.00	\$15.00	\$215.00	\$3,000.00
2	200.00	14.00	214.00	2,800.00
3	200.00	13.00	213.00	2,600.00
	etc.	etc.	etc.	etc.
Up to 15	200.00	1.00	201.00	200.00
	\$3,000.00	\$120.00	\$3,120.00	

Interest on Unpaid Principal

The third method of calculating interest, and the one which most closely follows banking practice, and to which the writer has adhered for some years, is what we have chosen to call the "interest on unpaid principal" method.

In brief, this method is exactly the reverse of the second plan above outlined, wherein the largest notes come at the start of the time period, the interest being paid in direct proportion to the decreasing size of unpaid balance.

Refer to Table "B"

While this method has the disadvantage insofar as the purchaser is concerned, of having the largest notes come due at the beginning of the time payment period, it nevertheless is more in accordance with established financial practices, and hence cannot be criticised from this source. As a general rule, therefore, it represents the most advisable method to follow in de-

(Continued on page 60)

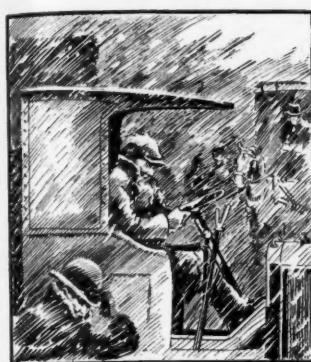


In the Gasoline Business the Cost of Transportation is the Pivotal Factor

So says L. V. Newton, transportation manager of the Pure Oil Co. He further states that it is impossible to operate a truck profitably on less than two loads a day. This is now being accomplished and over an operating radius 100 per cent greater than before with new high speed, six cylinder Pierce-Arrows which were recently acquired. These jobs are capable of road speeds of from 45 to 50 m.p.h. without imposition of strain on the engine.

How Big a Factor is the CAB

OBSOLETE



Does This Promote Efficiency?

to the

MANUFACTURER, DEALER and OPERATOR?

MODERN



Will This Driver Ever Quit?

Why Should the Dealer be Interested in CABS?

WHY are closed cars outselling open cars in the passenger car field? Isn't it the year-round comfort afforded drivers and passengers? For that reason the cab is an item of equipment that the manufacturer, the dealer, the fleet owner and the operator can ill afford to overlook. Since the cab is inherently a member of the automotive family, its existence, utility and benefits are felt by all. Only some refusing to recognize the distinct place the cab has in their respective businesses have carelessly let a profit-maker slip out of their control. Misguided, perhaps by precedent, or ignorant of certain changes they refuse to interpret the "handwriting on the wall."

Improved year by year in construction and design, the cab of today is such that every important detail making for the comfort and safety of the operator has been accommodated. After all, "driver comfort" is the crux wherein the demand for the cab is founded. Without "driver comfort" all the other desirable characteristics offered by cab equipment can not be consummated. First comfort, then efficiency. The earning capacity of a truck is in direct proportion to the efficiency with which it can be operated in all kinds of weather and at all seasons of the year. "Driver comfort" is pre-eminently present in the modern cab.

The Manufacturer's Interest

The growing demand for a closed cab that will give the driver ample protection without hampering his movements or blocking his vision, has been recognized by many manufacturers of motor trucks. If manufacturers, who always try to determine the trend of popular thought on matters pertaining in any manner whatsoever on their products, see fit to recognize a certain condition, it is a dependable barometer. Manufacturers with vision also try to accommodate the users' demand. Hence, we now find many manufacturers supplying the cab as standard equipment. The truck manufacturer has been and still

is particularly desirous of obtaining a cab on which he can standardize and recommend on his truck. His decision, due to the fact that his product is sold in every clime, for use over country roads, through congested city streets and in all kinds of weather, is based on the type that will best fulfill the majority of these requirements.

Dealers should be particularly interested in cabs. The foremost reason should be from the important standpoint of service. The dealer should be in the position to advise and accommodate patrons in every respect. The other factor is that of profit, which in itself should be sufficient inducement for him to carry a complete line of cabs.

The Dealer's Interest

A standardized cab business is one that affords a great many benefits to the dealer. The dealer can complete an entire deal with his prospect, by providing body, cab, etc., complete, without further annoyance or trouble to the buyer. Or, if the prospect merely wants a chassis, he can induce his prospect to purchase a cab for the reason that he can service it, sell it at a low initial cost, because it is a standard job, replacement parts can readily be secured, and finally the cab can be adapted to meet any service requirements. Many dealers have made a practice of referring much profitable cab business to the local body builder. This profit could just as soon have been diverted into the coffers of the dealer by standardizing on a line of cabs. The old story of having the local body builder build according to special specification is passe. The popular practice today is to purchase, unless provided as standard equipment, a cab of standard and known make direct from the dealer.

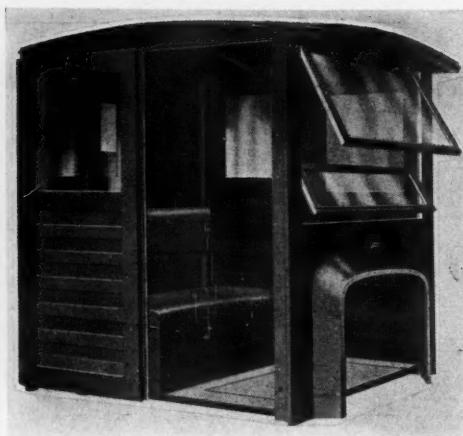
An interesting story in this connection was presented by a manufacturer as a sales argument in combating the made-to-order argument: "If somebody told your grandfather that he could walk into a store and get a better looking, better fitting pair of shoes immediately than he

could by having them made to order, the old gentleman would sort of chuckle. Still that is the way we buy shoes today and it is the way we buy cabs." This sums up the changed methods very nicely.

The Operator's Interest

The real benefit of cab equipment is felt by the fleet owner and his operators. Driver comfort is of utmost importance to the average truck owner because it means greater profits in cases where trucks are rented out for hire or reduced delivery costs when owned by the concerns whose goods they move. No man can work efficiently if he is benumbed with cold, sweltering in heat, half blinded with snow, rain or dust. The driver working under such conditions will be reckless and careless in his treatment of the truck and cargo. These factors should not be lost sight of particularly in view of the great increase of vehicular traffic and numerous accidents, which are characteristic of the busy districts of our large cities of today. It is manifest that the driver should have greater control over the truck he drives. Hence, every opportunity for increased control should be extended him. First in the form of a cab and secondly with a cab that will protect him and at the same time permit him to operate his truck unhampered by close quarters or lack of vision.

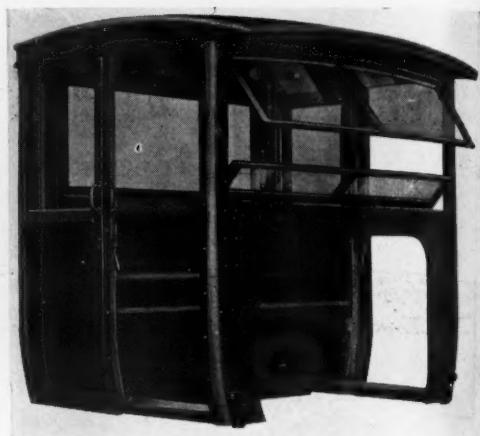
From a maintenance standpoint the cab question has a distinct psychological slant that should be capitalized on. A driver is prone to take more interest in the condition of the truck when he is supplied with a comfortable cab. The foremost thought in his mind is an uninterrupted run throughout the entire day. He knows that if the engine is not properly lubricated or the tires are underinflated that he might perchance be forced to make a roadside adjustment or repairs that will expose him to the discomfort of inclement weather. His main desire is to remain in a comfortable cab for the duration of his trip. He therefore manifests keen interest in determining whether all parts subject to



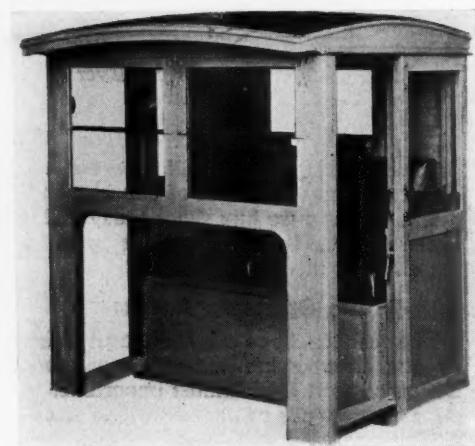
Spaulding Coupe



Field Vestibule No. 70



Rain-or-Shine Cab



Mulholland Cab



Stunkard Cab

CABS
That Furnish
Driver Comfort

While fundamentally similar, each cab illustrated here, possesses characteristics distinctly individual.

*The Dealer Should
Familiarize Himself
With the Various Fea-
tures of Refinement*

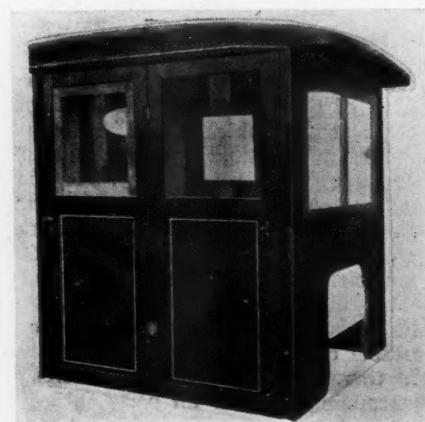
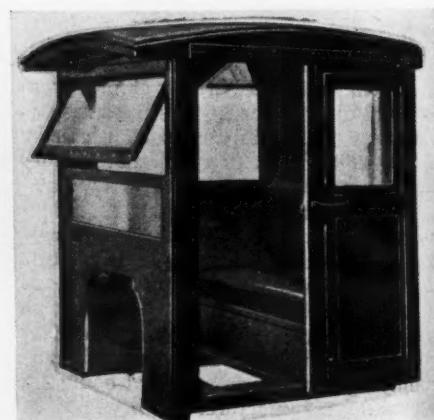
**Dealers Owe This
Service to Their
Customers**



Collins Cab



Metro Cab

Above: Clare Ford Cab. Left: Syracuse
Cab No. 205. Right: Springboro Cab

wear and possible breakdown are properly lubricated or not.

The cab of today is the product of many years of experimentation. Little difficulties and problems, that make themselves apparent only through experience, have been skilfully met by the engineers until today the cab is as near perfect as it is possible to make it.

Some of the most important factors of design are the following: The framework, which must be rugged and strong yet light and flexible; the roof, which should be of light construction, firm against the action of vibration and covered with a durable water-proofing material; the doors are offered in any number of designs, vary-

ing in general design and construction, however, whether swinging, sliding, etc., they eliminate sticking, binding, rattling and fit snugly; window construction, considerable variation is also noticeable here, but the underlying principles are identical, namely: The reduction of blind space, maximum vision, secure mounting of sheet glass, elimination of rattle, weather tight joints through use of felt and rubber strips. Upholstery, although dependent upon the price of the particular cab, one characteristic is not lost in the designing of the seat and upholstery and that is driver comfort. The seat and cushions are such that maximum riding comfort is afforded the driver.

The above is a brief summary of the general constructional features of the modern cab. Every manufacturer of cabs, however, has incorporated many refinements which are distinctive to his own line. These special features are interesting and meritorious, but space limitations will not permit a review of them.

In the following paragraphs we have attempted to present a broad picture of the various cabs obtainable and on the market today. Since only a short resume of details together with an illustration, wherever possible, is given, we would suggest that the reader communicate with the manufacturer should additional details on any particular cab be desired.

RAIN-OR-SHINE CABS

The General Woodwork Corp., Cincinnati, Ohio

These cabs designed to provide what the name implies can be converted into wide open cabs when the occasion demands. They are built in three standard sizes, and are applicable to all sizes of trucks of from $\frac{3}{4}$ to 7 tons capacity. They are constructed of hardwood and steel for flexibility and according to scientific principles that are said to make the cab non-conductive to heat or cold. The doors are of the sliding type; windows disappearing.

COLLINS CABS

Collins Plow Co., Quincy, Ill.

Roof is full slatted and covered with oiled duck securely held under the eaves by moulding. The frame is of oak, mortised, glued and screwed. Panels are of steel bound by Clover Leaf Moulding. Windows are fitted with anti-rattling devices and are of the disappearing type. Doors swing back and can be secured by fasteners at rear of cab. It is quickly demountable. Weather stripping is provided on each door. The solid constructed back is fitted with a sliding window. The cottonwood frame of the windshield is bound together by metal strips. Upper and lower sashes are fitted with double strength glass. The cushions are box type, made in 2 sections with 15 coil springs each. Double cushion feature allows gas tank to be filled while driver is seated.

FIELD No. 70 VESTIBULE CAB

Field Body Corp., Owosso, Mich.

Designed for mounting on any one ton truck. The door on the driver's side swings from the back toward the front, locking in an open position with its edges flush with the windshield making entrance or exit easy and efficient for the driver who needs only to slide straight out from under his steering wheel. Door on right side swings from forward to back. The back of the cab is solid and is furnished with a drop sash window. All windows, of which there are five, are of the drop sash type. They are fitted with rattle-proof and weather tight devices. Spring recoil devices prevent breakage. The windshield is of the one-piece design and

constructed of double metal channel. It is ventilated either in or out and is weather-tight when closed. It can be locked at any angle either in or out. All wooden parts are covered with pressed metal previously enameled which gives protection and appearance. Corners are constructed of angle iron by which also all the parts are assembled through the use of bolts. Parts are interchangeable. The top is slatted and covered with double texture top material. The seat box is adjustable, as is also the floor boards and dash. Back and seat cushions are constructed of deep coil springs covered with imitation black leather.

METRO CABS

Metropolitan Body Co., Bridgeport, Conn.

The Metro Closed Cab and the All-Steel Open Cab feature this company's line. The closed cab has sliding doors with drop sashes and windows permitting quick adaptation to weather conditions. A permanent and durable top is secured by the employment of small slats and heavy bows. All four sections of the windshield glass are set in rubber. Hardwood and metal is used throughout in the construction, metal being used in the dash and back. Reduction of rattle and weight is said to be obtained by the use of light steel on the inside door and side panels. Heavier steel is used on the outer panels. Cushions and lazy backs are full-spring construction. Locking devices hold the doors firmly open or closed. The design is such that maximum vision is afforded. All moving surfaces, such as windows, doors are equipped with anti-rattlers. All parts are standardized and interchangeable for repair or replacement. The cab is light in weight.

SPAULDING COUPE

Spaulding Mfg. Co., Grinnell, Iowa

The doors are large and silenced and are designed to hook back flush with the cab sides. Double ventilating windshield combined with drop windows in side panels and slide window in rear, provide ventilation. Depth of cab is slightly longer than average. Twin cushions, one-piece top, $1\frac{1}{2}$ in. stock in door, and Spaulding silencers are designated as the main features of the cab.

CLARE FORD TRUCK CAB

Clare Mfg. Co., Clare, Michigan

Designed for comfort and service this cab is constructed of hardwood and assembled with screws and bolts. The sides and back are of iron mounted on a substantial wood frame. Cushions and back of seat are constructed with springs. Windows are of the disappearing type, and the windshield can be tilted to any angle desired. Built a little longer than conventional this cab is designed to give ample leg room and comfort.

THE MULHOLLAND CLOSED CAB

The Mulholland Co., Dunkirk, N. Y.

This sliding door cab is made in two sizes—54 and 60 in. The back of the cab is constructed of $\frac{3}{4}$ in. tongued and grooved pine, reinforced with heavy angle corners, making a substantial bulkhead able to resist hard usage if heavy freight is piled against it. The framework is oak; panels, Plymetl, and the windows slide in felt channels. Special catches on the three back windows permit control of ventilation. The plate-glass windshield is split. Tongued and grooved pine is used on the roof. Cushions and back are built on deep springs. Brass spring strips are used instead of rubber under the windows and in the sides of the windshield.

STUNKARD CAB

Stunkard Brothers, Brazil, Ind.

This cab designed for severe service is constructed of metal. The steel panels are riveted to angle bars. The makers state that there are no loose joints after a few months of service. In the event of collision the body can be readily repaired. Oak is employed in the doors and front and top—double ventilating windshield. The doors are hung on a pivot rod with top and bottom arm carrying from center. This construction is claimed to eliminate sagging and rattling. It also permits ready detachment. Comfortable spring cushions and backs are provided and the roof is covered with heavy oiled duck.

(Continued on page 41)

Handling Service on a Business Basis

Making the Service Department Pay Depends a Good Deal on How the Mechanics Are Compensated. The System Employed by the Bonnell Motor Car Company, of Newark, is Interesting

By C. P. SHATTUCK

WHENEVER you find a truck dealer who started small but who is now well established, you will discover that he has given as much attention to the organization and development of his service department as to his sales organization. That kind of a truck dealer survives through periods of business depression because he has something else to bank on besides sales. This article deals with the Bonnell Motor Car Co., Newark, N. J., which is a concern that has attained sales results through the type of service that satisfies—not free service but rather the kind that keeps the truck on the road with low maintenance costs. The company represents the Graham Bros. and Dodge line and, being located in a city of approximately 500,000 population, has among its customers many business concerns operating fleets of trucks, besides a large number of single unit owners.

Accessible to the Owner

The service station is separated from the sales department. One is impressed with the prompt attention given by the service force. As one enters the service office he is greeted courteously by a young man who quickly places one in touch with the proper head of the department, F. P. Vogel, superintendent. He is as readily accessible as one of the service inspectors and it is this kind of service the truck owner appreciates. If more truck owners could readily make contact with the man higher up there would be less grief in service.

There are two features of the Bonnell service that stand out prominently. The first is the night service. This was in-

augurated some little time ago because of the desire of the company to render 100 per cent service to both fleet and single unit operators. It is the experience of every service manager that it is difficult to sell many of the owners the value of frequent inspections, proper lubrication and adjustments during the day. These owners as a rule cannot spare the truck for a few hours—at least they believe they cannot. As a result the trucks are operated to a point where major repair work is necessary and, frequently, the transportation service is interrupted.

Night and Day Service

The fleet owner, while more prone to keep his units in good condition, does not always desire to invest in a spare truck. While some dealers have solved this problem by having a rental truck available for the owner it has its disadvantages, among which is the cost to the truck dealer. Then, too, the large department store, for example, prefers to deliver its merchandise with its own trucks for advertising reasons.

When Superintendent Vogel sold the executive the idea of a night service the sales department saw the value, but those who keep watch of the overhead and expenses predicted it would be a costly venture. However, it was decided to give the plan a reasonable trial. Now, despite the fact that the accountant lost no opportunity to tack on every charge an accountant can, the plan proved Mr. Vogel's contention, that the service would be self-supporting. And there is every reason to believe that it will pay profit in a very short while.



F. P. Vogel

Superintendent, among other improvements sponsored Night and Day Service

The same service is rendered at night as during the day. One of the inspector-testers, who by the way, are service salesmen, remains on duty until 10:30 p. m., by which time all trucks arrive at the station. This affords ample time to inspect, test and write the shop order. This tester does not report until noon the next day. The testers alternate on night duty. These men do not object to the night work. They are interested in the success of the service station for reasons which will be given later.

There are three mechanics on duty, operating along the same lines as the tester, and there is a parts man on duty as well. He also helps to write the orders, make out bills, etc., and if there is a wreck he attends to getting it into the station.

The work done at night is not tested by the night men but is left for the day crew, which arrives early thus providing ample opportunity to complete the test and have the car ready for delivery. It may be assumed that occasionally there would be some delay, or that the day inspector would find some job improperly done, but this is very rare because of the system of compensating the mechanics.

Men Paid on Hourly Basis

This company employs what is termed the flat rate system but this is not a true definition because the mechanics are paid a bonus and the arrangement is such that it savors of the piece work method.



Attractive Quarters of the Bonnell Motor Car Co., Newark, N. J.

The plan has the fundamentals of the piece work system because a time is set for all operations. But unlike the true piece work method the men are not paid a fixed sum and allowed to make as much as they can by speed. The Bonnell mechanics are paid on the hourly basis.

For example, we will assume that a given operation is scheduled to take 5 hours and the man is paid 60 cents an hour. He completes the work in 4 hours. He has then a credit of one hour. He is given another job and with this he earns another credit, and so on. Now, his wages are paid on the basis of let us say 48 hours a week or 48 productive hours. But at the end of the week he will have, say, 48 additional, credit hours. These are extra hours he has earned by his ability and endeavor. On the 15th of each month the credits are computed and the mechanic given a check for the credit hours which is termed a bonus by the organization. Some of the men receive nice checks each month.

OPERATION "A"

Remove cylinder head, scrape carbon.
Tighten starter chain.
Equalize and adjust both brakes.
Test battery and charge if necessary.
Drain oil, flush case, clean strainer and refill.
Remove all wheels, wash wheel bearings, repack with grease.
Adjust all wheel bearings.
Grease transmission.
Grease universal.
Grease differential.
Fill all grease and oil cups.
Oil brake connections.
Wash and polish car.

Price, \$15.00, Material and Labor

OPERATION "C"		
Flat Rate Prices on Repair Work—Graham Brothers Trucks		
	Labor	Approx. Parts
Overhaul rear end	\$30.00	\$28.80
Overhaul transmission	26.00	18.35
Overhaul clutch	18.50	12.20
Reline foot brake	12.00	9.60
Reline hand brake	12.00	5.90
Reline both hand and foot brakes	20.00	15.20
Equalize and adjust both brakes	3.50	...
Replace rear spring	6.50	11.00
Replace front spring	2.50	6.00
Replace front fender	4.00	9.50
Rebush front construction, spindles and tie rod	8.00	3.30
Rebush fan	2.50	4.80
Repair steering gear	10.00	6.40
Remove cylinder head, clean carbon	3.00	.40
Remove cylinder head, clean carbon and grind valves	10.00	1.10
Tighten starter chain	1.00	...
Regular Lubrication		
Remove wheels, wash bearings, repack and adjust		
Grease transmission, differential and universal		
Fill all oil and grease cups	\$7.50	\$2.30
Drain motor oil, flush, clean strainers and refill with Dodge Brothers Special Oil		
Partial Lubrication		
Drain motor oil, flush, clean strainers and refill with Dodge Brothers Special Oil		
Clean grease off rear wheels and brakes		
Drain differential to proper level	\$5.50	.35
Adjust both brakes		

This system has been in effect for some time and has proven entirely satisfactory both to the company and the mechanics. It has had the inevitable result—increased production and increased earnings for the men. When the plan was first inaugurated there was one man, an engine man of years of experience who could not see how it would be possible or practical in his work. He was not sold on the idea but as he was a valuable man it was agreed that he should continue on the weekly wage basis. Here is the result. When this man saw the bonus checks

OPERATION "D"

Remove cylinder head, scrape carbon.
Grind valve—reseat if necessary.
Adjust all valve tappets.
Clean fuel strainers.
Clean and adjust distributor points.
Tighten all body bolts.
Equalize and adjust both brakes.
Tighten steering gear.
Tighten steering gear ball joint.
Tighten steering gear drag link.
Line up front wheels.
Remove all wheels, wash wheel bearings, repack with grease.
Adjust all wheel bearings.
Grease transmission.
Grease universal.
Grease differential.
Fill all grease and oil cups.
Oil brake connections and rods.
Drain oil, flush case, clean strainer and refill.
Wash and polish car.

Price, \$30.00, Material and Labor

OPERATION "B"

Special Motor Job

Labor Approx.
Parts

\$85.00
Parts and Labor

Test car on Wasson Motor Check

Take up on all main and connecting rod bearings

Fit new piston

Fit new piston rings

Fit new wrist pins and bushings

Clean carbon and grind valves

Clean fuel strainers and points

Time motor

Test car on Wasson Motor Check after 500 mile run

Regular Lubrication

Remove wheels, wash bearings, repack and adjust

Grease transmission, differential and universal

Fill all oil and grease cups

Drain motor oil, flush, clean strainers and refill with Dodge Brothers Special Oil

Partial Lubrication

Drain motor oil, flush, clean strainers and refill with Dodge Brothers Special Oil

Clean grease off rear wheels and brakes

Drain differential to proper level

Adjust both brakes

Flat Rate Prices on Repair Work—Dodge Brothers Cars

Overhaul rear end—full floating	\$24.00	\$28.60
Overhaul rear end—semi-floating	22.00	28.60
Overhaul transmission	24.00	18.35
Overhaul cone clutch (1915-1916)	20.00	10.16
Overhaul disc clutch (1916-1917—5 plate)	18.00	12.20
Overhaul disc clutch—present type	16.00	12.20
Reline foot brakes	8.00	5.25
Reline hand brakes	8.00	2.90
Reline both brakes (in one job)	13.00	8.20
Equalize and adjust both brakes	2.50	...
Replace rear lower spring	4.00	8.00
Replace front spring	2.50	6.00
Replace rear fender	3.00	9.50
Replace front fender	4.00	9.50
Replace side splash pan (old style)	2.00	2.65
Replace side splash pan (new style)	2.50	4.90
Replace running board (old style)	4.00	5.10
Replace running board (new style)	4.00	7.20
Rebush front construction, spindles and tie rod	8.00	3.30
Rebush fan	2.50	4.80
Repair steering gear	10.00	6.40
Clean carbon	3.00	.40
Grind valves, clean carbon, adjust tappets	10.00	1.10
Tighten starter chain	1.00	...

of his fellow workman he began to think there was something in the plan and finally agreed to try it. And now, if he was asked to go back to the old wage plan he would surely give the superintendent some argument.

The service system provides for the "come back." Any work not satisfactorily performed is carefully inspected and if the mechanic was at fault he does the work over on his time. "Come backs" are rare because the men are careful and the inspection is rigid. All completed jobs are thoroughly tested and the system prevents any possible collusion between the testers and the men. There is always the owner who stands in between.

Where flat rate, piece work or bonus systems are employed, care must be exercised that the men are correctly credited. While the men will keep a record for themselves they are likely to error, therefore it is up to the service station to make the record keeping fool proof. At the Bonnell station a very large printed sheet is used. This is kept by one man who receives the repair order, enters it with requisitions, etc., and the mechanic when completing his work turns over the order which, of course, includes start and finish of the work. In this way the sheet carries the record of the work, time, parts, etc., and is used to check against the station records. Any dispute as to bonus

time can be readily settled by the sheet for the shop time, etc., will check with the forms, etc. The sheet is also of value in that the man in charge, as well as superintendent, can note the production at a glance. Jobs in progress can also be noted. Various forms are employed with the usual duplicates for filing, etc. All Dodge service is on the flat rate to the owner. The price is given for parts and labor before any work is begun. A number of flat rate operations have been worked out on the Graham Bros. trucks and others are being compiled, it being the intention of the company to afford the owners the same service as on Dodge trucks.

The Dodge flat rates are too well known for further discussion but a few of the so-called combination service operations are reproduced herewith, and which give a lump sum or cost for a number of operations. These combinations, so-called, are proving very popular and were developed to care for what is termed "standard" work, that which is most frequently in demand.

The "A" operation (this is not the designation) deals with lubrication to a great extent, although carbon is removed. The operations included are those very frequently overlooked by the truck owner

and an analysis shows that the combination will increase the life of the truck to say nothing of avoiding the possibility of delays on the road. This "A" operation applies both to Graham and Dodge trucks.

The "B" operation is a special motor job. Included on the form is the regular lubrication operation, also another or partial lubrication. Following this are 18 other operations, and all give the price, not hours. All of these operations apply to the Dodge 1500 lb. capacity truck. In connection with the brake operations the owner who neglects proper lubrication of the linkage, or who has a broken stud in the assembly, is charged extra and above the flat rate. This is, of course explained to him by the service salesmen, tester, and the latter endeavors to diplomatically point out to the owner the cost of neglect. It should also be explained that an effort is made to educate the owners to the value of frequent inspection and proper lubrication and how they reduce maintenance costs. (See "B").

Tables "C" and "D" are the flat rates worked out for Graham Bros. trucks, older models.

In connection with the lubrication rates an extra charge is made on brake work when it is found that the differential housing has been filled at too high a level

and the lubricant has worked out and smeared the lining, etc. A charge of 30 minutes extra labor is made for the cleaning. Here again the owner is given an explanation to show him why an extra charge is made.

At the time of this writing, Mr. Vogel was developing a "tickler" or follow-up system for those owners who do not accept the advice of the service salesmen for needed adjustments or repairs. These owners will be followed up, for it is the endeavor of the station to keep maintenance costs down.

Field men are employed whose duty it is to call on the new owner, inspect and make minor adjustments as well as to supply useful information such as taking care of the cooling system in cold weather, etc. There are frequent conferences between the various heads of the service department at which the various problems are thrashed out and ideas and suggestions discussed. The Bonnell Motor Car Company carries a large supply of parts for both trucks and a feature of the service station are the large display windows in which are shown equipment and accessories for the trucks. During November these windows were dressed with fall attire with an atmosphere of the outdoor hunting season.

Shipping Printing Ink in Bulk

BY the use of a truck and semi-trailer at their Philadelphia office The Ault & Wiborg Co., manufacturers of printing inks, have entirely eliminated hand labor in connection with the shipping and delivering of ink to newspapers in Philadelphia. Not only has man power been done away with in Philadelphia, but also in the factory in Jersey City so far as shipments for Philadelphia are concerned.

Usually newspaper ink is shipped in drums weighing about 450 pounds each. These are filled at the factory in Jersey City and loaded on freight cars. At their destination they are unloaded on trucks and taken to the company's branch warehouses. The drums are then taken out as needed and hauled each day to the newspaper plant. Here the drums are emptied into the ink tanks of the newspaper's plant and the empty drums taken back to the warehouse and then reshipped.

But now all inks coming from the Ault & Wiborg factory to Philadelphia is handled in bulk. It is pumped into a tank car at Jersey City and shipped by rail to Philadelphia. Here the tank car is unloaded by gravity, the ink flowing down into a tank near the company's siding. Then it is pumped into overhead storage tanks. From these tanks the ink flows by gravity into a tank on the trailer. The trailer holds about 5,500 pounds of ink.

When loaded the trailer is taken to platform scales and the truck is unhitched and the trailer and load weighed. Then the truck backs into the trailer, off the scales, and then goes to the newspaper plant. Here the ink is pumped by a power pump mounted on the truck into

the storage tank of the newspaper. After unloading the trailer is driven on the same scales and weighed empty. This double weighing gives the net amount of ink delivered.

Several important economies and advantages have resulted from the use of this truck and trailer. There is no longer any question at all about the amount of ink delivered. Both parties accept the figures of the weighmaster of the platform scales. When drums were used there was always a difference in the "tare" stamped on the drum and the weight claimed by the newspaper, because of the quantity adhering to the drum after emptying.

The newspapers are much better satisfied with the trailer delivery. The truck and trailer have been in use for about a year. During this time the equipment

has saved much money in the delivering of ink and has given the company the benefit of the greater satisfaction of its customers.

Goodrich Cross-Word Booklet

The popularity of cross-word puzzles has been seized upon in a very unique and effective way from an advertising standpoint by The Goodrich Co. in a twenty-page booklet they have just released through their branches.

Eight very difficult puzzles are offered for solution in the booklet, which also shows on opposing pages different tires in the Goodrich line. The puzzles all contain the name of some Goodrich product either horizontally or vertically in their make-up.



The Substitution of Tank Cars for Drums Has Caused a Big Saving in Time and Money

New 27-Passenger Schacht Designed for High Speed Interurban Traffic

A SIX-CYLINDER, low hung, pneumatic-tired bus chassis, 27-passenger, designed for high speed interurban traffic, is the latest contribution of the G. A. Schacht Motor Truck Co., Cincinnati, Ohio. It is known as the Schacht "Super Safety" Bus, and was designed especially for passenger carrying service. This new bus has certain unusual features, the most important of which is the use of a gearset having eight forward and two reverse speeds. The transmission provides two speed ranges, the lower ratios from 4.75:1 to 1:1 and the higher ratios from 3.35:1 to 0.705:1. The top speed in the higher range is over-gearred, permitting high speed without excessive engine speed.

The power plant is the new Wisconsin type-Z six-cylinder bus engine described in the November issue of Commercial Car Journal.

A stiff and low frame structure is a prominent feature of the design. The frame is a Parrish & Bingham product and has kicked-up side members which are formed from $8\frac{1}{8} \times 2\frac{3}{4} \times \frac{1}{4}$ in. channels to which outriggers are attached. The side rails are joined by five nickel steel tubes brazed and pinned to suitable end castings which are riveted in place. Two additional cross members are used. One supports the forward end of the amidships gearset and the other is located at the forward end of the rear springs. The latter is well gusseted and serves to support the air diaphragm housings which form a part of the braking system.

Mounted near the center of the chassis is a hand-operated propeller shaft brake, the anchorage for which is supported from one of the five tubular cross members which also carries the rear end of the gear-

set. Beside this brake is the air reservoir, which is filled from a compressor mounted on the engine.

The frame is narrowed from the center forward and at its front end is attached to Gruss air springs. The I-section front axle is a Shuler product and is equipped with brakes designed for air operation.

Housings for the air diaphragms which operate the front brakes are attached to brackets which in turn are fastened by clips to the upper portion of the yokes of the Elliot type axle ends. On the outer ends of the brake plungers are split wedges which straddle the elongation of the axle pivot pin and engage with tapered surfaces so that outward motion of the wedge forces these surfaces and connecting parts upward, thus applying the internal brake bands.

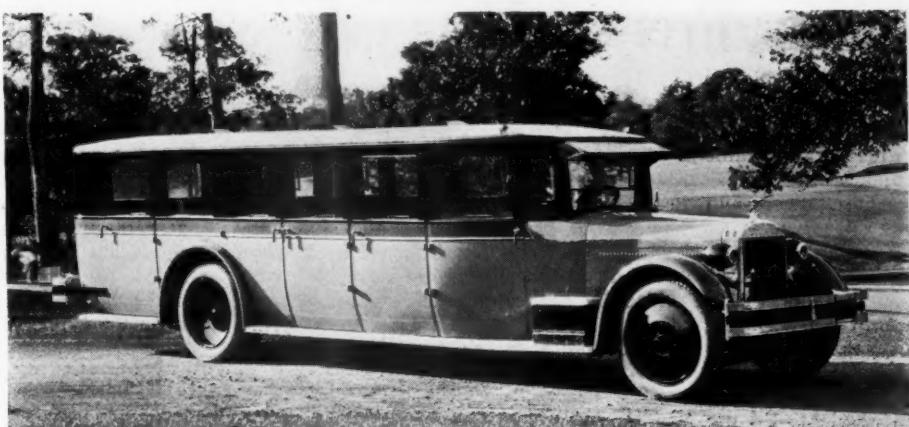
Rear brakes are operated by levers and pull rods actuated by the plungers of the air diaphragms, the housing of which are attached to the frame. These brakes are also of the expanding type. The total area of the brakes operated through the usual pedal controlling the Westinghouse

air valve is given as 882 sq. in. As indicated above, the hand brake operates on the propeller shaft drum. It has a bearing area of 96 sq. in.

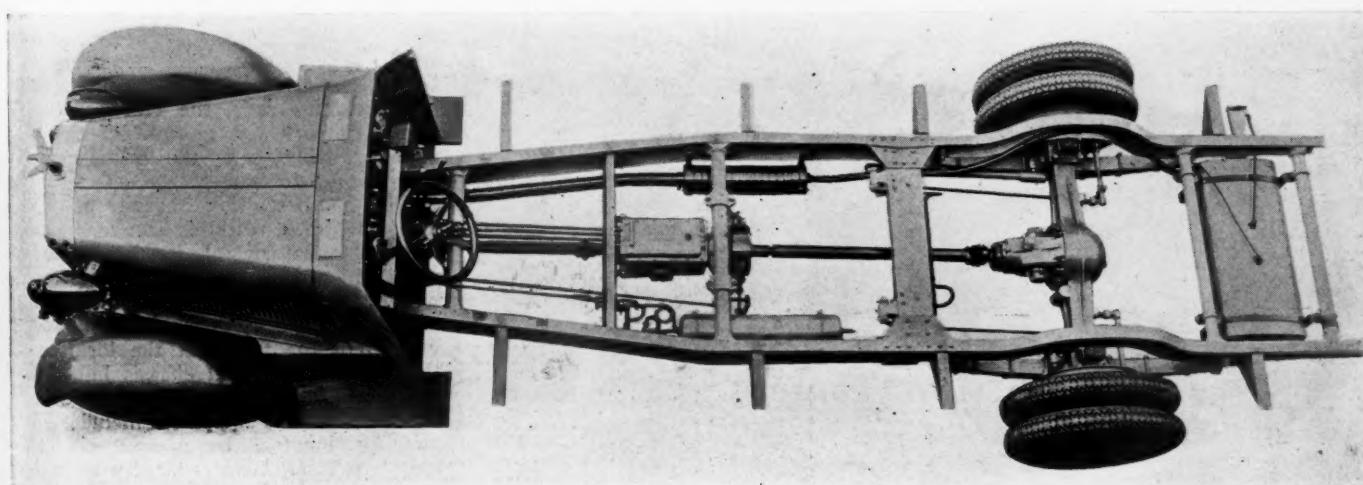
A model 1300K-3, double reduction, full-floating Wisconsin rear axle with 6 to 1 gears is employed. This axle carries dual Budd-Michelin disk wheels on which are mounted 36 x 6 in. pneumatic tires. The same size tires used on front wheels.



Close-up Showing the Brake Assembly of the Front Wheel



The Schacht Super Safety Bus is Replete With Features



Bird's-eye View of the New Schacht Safety Bus Chassis, Showing General Lay-out and Disposition of Units. It is Powered by a Six-Cylinder Engine and Equipped With Westinghouse Air Brakes on Front and Rear Wheels

Radius rods made from tubing formed after the fashion of the conventional drag link with ball ends are employed, but torque is taken by the rear springs. The forward ends of the radius rods are pivoted on brackets carried by the frame cross member which is just forward of the front end of the rear springs. The drive from the gearset is through a shaft fitted with two Blood-Brothers universal joints. The shaft connecting the front end of the gearset to the Fuller multiple disk clutch also has two universal joints.

Steering is by Ross cam and lever gear, mounted at the left side of the frame, with the column incline as in conventional practice. Gearset control levers are mounted in the center of the chassis frame and are connected to the gearset shifter forks by four tubular pull rods.

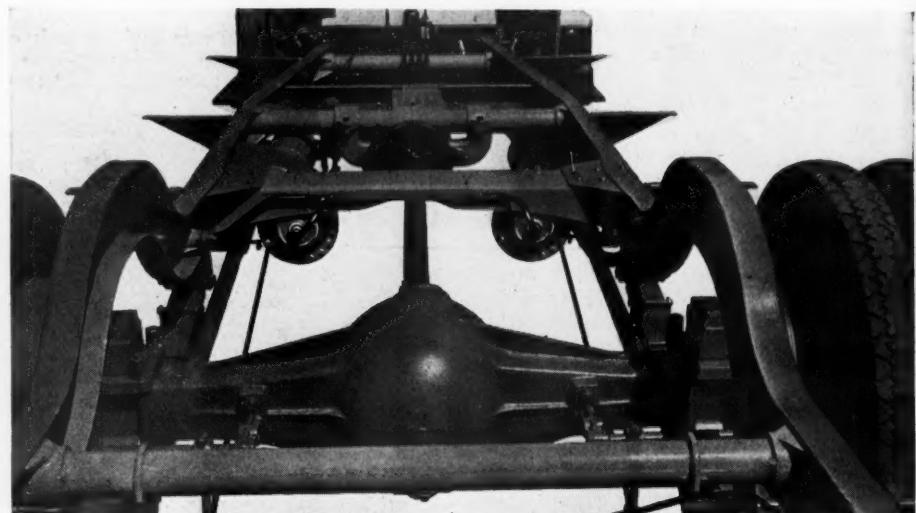
Cooling is effected by a Wheeler fin and tube type radiator core with cast aluminum top and bottom tanks, which give an effective appearance to the front of the vehicle. E & J special bus lamps are mounted on brackets which extend from the side members of the radiator. A Leece-Neville starting and lighting system with voltage regulator and a Robert Bosch magneto is used.

Fuel is fed to the Zenith carburetor by vacuum tank from 35-gal. supply tank, which is carried in a cradle between the

two rearmost cross members of the frame. An Alemite chassis lubricating system is provided.

The chassis has a 201 in. wheelbase and an overall length of 282 in. Overall width is 91 in. Front tread 67½ in. and rear tread 84¾ in. or 91¼ in. outside

tires. Turning radius is given as 33½ ft. and chassis weight with tanks filled as approximately 6,400 lbs., of which about 63 per cent is on rear wheels. Distance from dash to end of frame is 221½ in. and from dash to center of rear axle, 162½ in. This chassis lists at \$5,900.



Illustrating the Rear Axle, Arrangement of the Westinghouse Airbrake Chambers and Kick-up of the Frame Over the Rear Wheels

Fisher Fast Freight New One and a Half Ton Speed Chassis

LOWER center of gravity and frame height, full pneumatic tire equipment, ample engine power and a broad range of speed, combine to make the new Fisher Fast Freight suitable for high speed road haulage, parcel delivery or the bus field. This chassis, which is the latest development of the Standard Truck Co., Detroit, is listed at \$1295 and has a wheelbase of 146 in. The load capacity is 3000 lbs.

A Continental 4½ x 4½, model S-4, four-cylinder engine is used with a rear axle gear ratio which gives a maximum speed of 35-40 m. p. h.

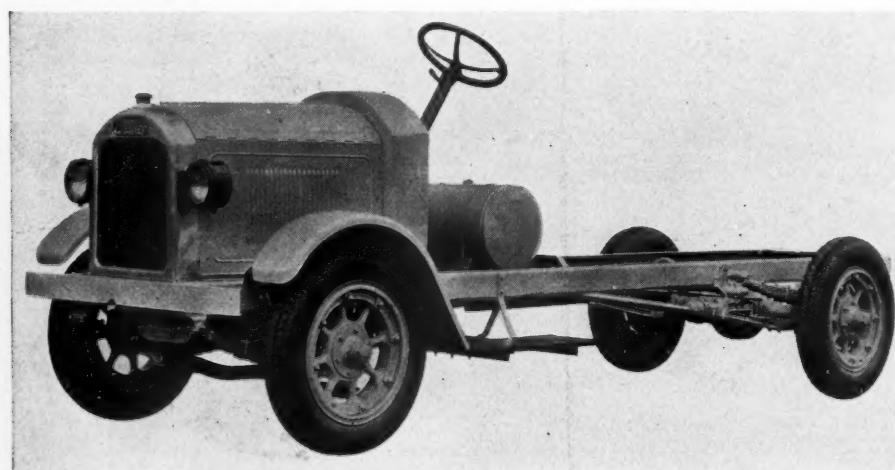
The frame is formed of parallel pressed steel side channels and three channel cross members reinforced with gussets. The front cross member also functions as a bumper and is reinforced by a wood bolster. Additional frame strength is provided by the conventional Standard step bracket construction and rear spring anchor bolts, which extend clear across the chassis.

The engine, multiple disk clutch and gear box are mounted in unison, three point suspended. Electric starting and lighting are standard, with battery ignition, although magneto equipment can be

provided at an additional cost of \$55. Lubrication is provided by a gear oil pump. A belt-driven fan and gear-driven water pump in conjunction with a continuous fin and tube radiator constitute the cooling system. The radiator core is housed by a cast aluminum shell which carries the head lamps.

Drive is transmitted to the rear axle through a two-piece propeller shaft. Enclosed mechanical universal joints are fitted at both ends of the two propeller shaft sections and the intermediate support is an S K F self-aligning bearing. The rear axle is full floating, banjo type, equipped with spiral bevel gears. External brakes on the rear wheels form the service braking equipment; the emergency brake is carried in back of the transmission. Radius rods, the rear centers of which are set well forward of the rear axle center-line, carry the torque reaction and driving thrust.

Left hand steering through a worm and half-worm wheel is standard equipment. Manual controls for the carburetor and ignition are located under the steering wheel. A welded cylindrical gasoline tank of 35 gals. capacity is mounted in saddles on top of the frame at the location of the driver's seat. All chassis lubrication points are fitted with pressure gun attachments. Standard equipment includes complete lighting facilities, pressed steel running boards and fenders fitted with aprons at the front end. This chassis will accommodate a 14 ft. bus body or 10 ft. commercial body.



Chassis of the 1½ ton Fisher Fast Freight. It Was Designed for High Speed Road Haulage, Parcel Delivery, or the Bus Field

Details of the Philadelphia Gas-Electric Coach

ALTHOUGH there are quite a number of gas-electric rail cars in operation in different parts of the country, the two-motor, direct drive system used in the Philadelphia buses is entirely new. Thorough tests covering a nine-month period were made, to the complete satisfaction of the Philadelphia Rural Transit Company engineers, before bids on an order for 200 double-deck coaches were requested. The order was finally granted the Yellow Coach Mfg. Co., which company will attempt to discharge the order within the year. The General Electric Company is supplying the electrical units; Timken-Detroit Axle Company is furnishing the special rear axle assembly; and the power-plant is furnished by the Yellow-Sleeve Valve Engine Works.

Proponents of the gas-electric coach assert that simplicity of operation and



Typical of the Double-Deck Gas-Electric Bus to be Used in Philadelphia

Chassis and bodies are being built by the Yellow Coach Mfg. Co.; electrical units by the General Electric Co.; power plant by the Yellow-Sleeve Valve Engine Works, and the rear axle by the Timken-Detroit Axle Co.

smoothness of performance, which are inherent characteristics, reduce maintenance costs and increase the longevity of the coach making the ultimate cost of gas-electric lower than the gear-shift coach.

In the new system the transmission of power from the engine to the wheels employs features that are decidedly new in many respects. In place of the usual clutch and gear transmission a dynamo and two motors are employed, which connect direct to the engine. Power developed by the engine is converted into electrical energy by the generator, and is conducted to either or both of the motors, which are mounted parallel to each other amidships in the chassis. Transmission to the motors is controlled by a switch, more commonly known as the controller. Two propeller shafts, one for each wheel, and independent of each other, lead from the motors to the rear wheels. The rear end assembly departs from the conventional in that drive is independent in each wheel. This construction effects a self-compensating drive and obviates the losses of a mechanical differential.

Briefly the engine is employed as a constant source of power. Requirements of drive are met by altering the amount of electrical energy drawn from the generator. The system is so designed that

the current generated at any engine speed corresponds to a definite car speed. There is no surplus of electrical energy to dispose of by storing up. Consequently there is no need of a battery. All changes in voltage and ampere relations are automatically secured by the inherent characteristics of the generator itself. When starting, the generator provides a high current or amperage and a low voltage, which condition automatically and gradually reverses, voltage increasing and current decreasing, until normal running speed is attained. The generator output is substantially constant for all road conditions providing the necessary torque for acceleration or hill climbing without overloading the engine. Speed increases are so smooth and gradual as to be almost imperceptible. This characteristic makes the coach safer for passengers getting off and on, or standing in the aisle. There are no jolts and operation is quiet.

The single control accelerator pedal on the engine throttle permits the driver to keep his hands on the steering wheel at all times, except when using the emergency brake. The electric control is similar to the current-limit relay used in railway work with master controller. The driver cannot race the engine, nor stall it. The physical and mental fatigue resulting from incessant shifting of gears is generally considered of minor importance. It is, however, quite important. A mechanical bus making 180 miles per day on a 10 stop schedule with three shifts per start, would require a total of 5,400 shifts per day; the gas-electric bus requires none.

Elk Manufacturing Company Expands

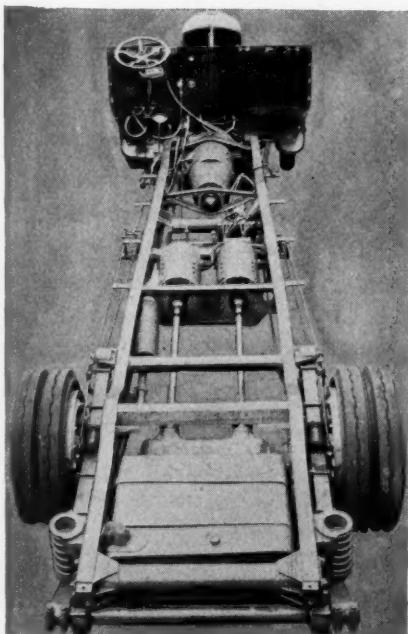
Announcement has just been made by Fred B. Johnson, president of the Elk Manufacturing Company, Los Angeles, Cal., that his concern is planning to construct a modern brick and concrete factory in the Central Manufacturing District here, for the manufacture of commercial truck bodies.

The factory is being specially designed for the economical manufacture of commercial truck bodies as well as special bodies for Ford and Chevrolet chassis. The building will be one story in height and so designed to permit future expansion.

The Elk Manufacturing Company is two years old, having been organized in November, 1922, at which time operations were started on a small scale. Later they moved from their original location to their present site at 5012 South Main Street. The proposed plant is the result of their outgrowing the Main Street location.

Levene Services Signal

The Levene Motor Co. has taken over the entire parts and service business of the Signal Motor Truck Co., of Detroit, and has moved this business to its plant in Philadelphia. The Levene Co. will continue to give service on Signal Trucks to owners and dealers.



Showing Well-Balanced Disposition of Units

Note absence of controls; location of generator; mounting of two motors, two propeller shafts, general frame and spring construction.



All about Electric Truck Construction

This 64 page Book on Request

A Truck Dealers' Guide

Here's a book that answers the questions that have been forming in your mind regarding the electric truck and its possibilities on short-haul, frequent-stop routes—the most complete manual of electric truck construction ever printed.

It tells why electric trucks last two to five times as long as other vehicles. Why bodies on electrics last longer than on other vehicles.

It shows just where the electric truck is similar to the line you are now handling and where it is dissimilar—in selling and service.

It contains information on the various types and drives used in both the electric and the gasoline fields—points for and against each type of drive.

Tells about wood wheels and steel wheels and their effect on tire wear.

Tells other things that will be helpful to you in selling and servicing trucks.

Chockful of selling points of the electric truck versus the horse and wagon.

Handsomely bound, size 8½" x 11", 64 pages and cover. Printed in large, easily read type and illustrated with 63 illustrations. Altogether the most complete catalog ever issued by an electric truck manufacturer.

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Ward Motor Vehicle Company
Mt. Vernon, N. Y.

Ward Electrics



EDITORIALS



Knocking vs. Knowing

KNOCKING your competitor's proposition is no sales argument. There is no use of the salesman trying to sell the best truck in the world if he does not know why it is the best. He can only appreciate that fact when he knows how it compares in detail with any other make that the prospect introduces into the discussion.

As an operator gets more and more experience, he becomes as a buyer, to use a colloquialism, more "hard-boiled." The salesman always ought to have more knowledge about the truck business than the potential buyer, and nowadays the latter is usually well informed. The modern transport manager is a product of the hard school of experience. He has to be shown facts and figures to interest him. Also he is more given to comparisons. That is why dealers who are not ahead of the times are finding it increasingly difficult to get salesmen who are stickers.

Truck selling now calls for a highly specialized knowledge, not only of current productions, but of the mistakes of yesterday.

If a salesman makes a claim, he must be able to substantiate it. Suppose for instance he claims that the engine of his truck has a big advantage in the matter of wear because of some special treatment of the cylinder block. The prospect retorts that so-and-so's tried that a couple of years ago and found it of no benefit. Is the salesman going to be stumped and quit or is he going to give chapter and verse of what really happened and why this treatment is different from the one mentioned by the prospect? This is a matter of vital importance to the sales manager, and shows why the casual salesman is often worse than useless. Truck salesmen must be provided with the proper information by the sales manager if they are to be 100 per cent efficient.

Periodically they should have a clear statement as to why the product they sell is better than that of their competitor. This is not for knocking purposes, but to provide a reasonable answer to the prospect who, nine times out of ten, will cite some other make of truck as having the same or better features. The salesman must know more than the prospect, and it is the sales manager's job to see that he does so.

Incomplete Sales Literature

QUITE a bit of sales literature is issued during the course of a year by accessory and parts manufacturers, in all forms from the envelope stuffer to handsomely gotten up catalogs. In perusing this sales literature it is surprising to find the unconcern some manufacturers display in regards to describing the adaptability of their product to the motor truck and motor bus.

Naturally some products are designed particularly for passenger car service and it would be useless to recommend them to motor truck dealer or owner, but there are many accessories on the market which are just as applicable to the truck as to the passenger car. Some manufacturers do not seem to realize this, principally because they are so used to thinking of trucks as heavy duty jobs, forgetting entirely that the biggest percentage of motor driven vehicles on the highways are of the light delivery type.

Many cases have come to our attention where a careful reading of the literature issued by the manufacturer failed to indicate that the product in question was designed for use on commercial cars. However, subsequent correspondence with the manufacturer produced the information that the device in question "certainly was being sold for commercial car service and that such and such companies are adopting the device as standard equipment."

But one wouldn't know that from the way the circular or catalog reads.

Eventually or Now

THE decision of the Boston & Maine Railway to abandon about a 1000 miles of its unprofitable branch lines and to substitute motor trucks and motor buses does not come as a surprise to those who are making a close study of transportation economics. No business concern can keep on piling up the deficit of one department against another without eventually breaking down the profitable department. Railroads cannot be run continuously without a profit. The action of the Boston & Maine officials indicates good judgment. By substituting motor trucks and buses not only will the monetary loss be diminished but a more flexible and better service will be rendered to the public.

News of the Trade

Keen Interest Exhibited by Contractors at Road Show

Convention and Exhibit Voted a Big Success. Delegates Discuss Construction, Traffic and Transportation

Road construction from the scientific and practical standpoints, traffic problems and motor transportation held the center of the stage in Chicago at the annual convention of the American Road Builders' Association. The convention held forth at Congress Hotel the first three days of the week, about 500 delegates being present and with J. H. Crawford, of Washington, D. C. presiding.

In connection with the convention was a large exhibition of road construction machinery at the Coliseum, a display open to the public and viewed by many thousands of people despite its technical nature. Much of the equipment shown is motorized and there were a number of

new introductions of interest to the road engineer. Those in charge of the exhibits reported high interest on the part of contractors who turned out in good numbers. The contractors were generally optimistic respecting the 1925 outlook for road building.

One of the principal speakers before the convention was Thomas H. McDonald, chief of the bureau of public roads at Washington. "Traffic has developed overnight," he declared. "In many areas of dense population the utilization of highway transport has been slowed down and the normal and entirely justifiable use of the motor vehicle definitely curtailed."

Mr. McDonald said that the chief benefit of the Federal Aid System has been to establish a plan for the future.

The Lincoln Highway Association has moved its offices to B-147 General Motors Bldg., Detroit, Michigan.

Continental Motors Shows a Substantial 1924 Increase

After Meeting Federal Tax Requirements the Net Profits for the Past Year Totals \$2,502,522, a Gain of 30 Per Cent

The Continental Motors Corporation, in its annual statement to stockholders just issued, shows a net profit before Federal taxes of \$2,870,022.76 for the fiscal year ending October 31, 1924, a substantial increase over the figures of the previous year. To meet Federal tax requirements \$367,500 was deducted leaving a balance of \$2,502,522.76 as net profits for the year, which is equivalent to \$1.42 per share on the 1,760,845 shares of no par value common stock outstanding. This compares with net earnings of \$1,937,453.25 in the previous year, a gain of 30 per cent and conclusively justifies the dividend action taken by the company during the past year.

COMING EVENTS

CONVENTIONS

Michigan Automotive Trade Assn.—18th annual convention to be held in Detroit, Mich., January 21, 1925. W. D. Edendum, Mgr., Hotel Addison, Detroit.

Texas Automotive Dealers Assn.—Annual convention to be held in March, 1925, at Austin, Texas. W. A. Williams, Mgr., San Antonio.

SHOWS

Albany, N. Y., Feb. 21 to 28, 1925—15th annual show to be held in the 10th Infantry Armory (42,000 sq. ft.), under the direction of the Albany Automobile Dealers Assn., Inc. Passenger cars, trucks and accessories. J. B. Wood, Treas., care of Chamber of Commerce.

Boston, Mass., March 7 to 14, 1925—23d annual show to be given under the auspices of the Boston Automobile Dealers Assn., Inc., at the Mechanics Bldg. (125,000 sq. ft.). Passenger cars, trucks, tractors and automotive equipment. Chester L. Campbell, Mgr., 329 Park Sq. Bldg.

Buffalo, N. Y., January 10 to 17, 1925—Buffalo Automobile Dealers Assn. Twenty-third annual passenger car, truck, tractor and accessory show will be held in the 17th Regiment Armory (55,000 sq. ft.). Carlton C. Proctor, show manager. Address, Room No. 1 Mezzanine floor, Hotel Statler.

Chattanooga, Tenn., February 2 to 7, 1925—1st annual spring show to be held in the Soldiers & Sailors Memorial Auditorium under the direction of the Chattanooga Automotive Trades Association. Passenger cars, trucks and accessories. J. R. Scott, secretary, 809½ Broad St.

Chicago, Ill., January 23 to 31, 1925—National automobile show to be held under the auspices of the National Automobile Chamber of Commerce, Coliseum and First Regiment Armory.

Cleveland, Ohio, January 17-24, 1925—Automobile Manufacturers and Dealers Assn. Twenty-third annual passenger car and truck show, Public Auditorium, Cleveland, Ohio. Herbert Buckman, manager.

Columbus, Ohio, January 12 to 17, 1925—20th semi-annual show to be held in the Automobile Building, State Fair Grounds (105,000 sq. ft.), under the direction of The Columbus Automobile Dealers Co. Passenger cars, trucks and accessories. Anson B. Coates, manager, 215 N. 4th St.

Detroit, Mich., January 17 to 24, 1925—24th annual show to be held at Convention Hall,

under the auspices of the Detroit Auto Dealers Assn. Passenger cars, trucks and automotive supplies. H. H. Shuart, Mgr. **Indianapolis, Ind., March 2 to 7, 1925**—14th annual show to be held in the Automobile Building (84,000 sq. ft.), under the direction of the Indianapolis Auto Trade Association. Passenger cars, trucks, accessories, tops and bodies. John Orman, manager, 338 N. Delaware St.

Kansas City, Mo., February 7 to 14, 1925—18th annual automobile show under the auspices of the Kansas City Car Dealers Assn. will be held at the American Royal Bldg. (300,000 sq. ft.). Passenger cars, trucks, tractors, and automotive equipment. Geo. A. Bond, show mgr., Firestone Bldg., Kansas City.

Milwaukee, Wis., January 17 to 24, 1925—17th annual show to be held in Auditorium under the direction of Milwaukee Automotive Dealers Association. Passenger cars, trucks, tractors and accessories. Bart J. Ruddle, Mgr., 319 Brumder Bldg.

Minneapolis, Minn., January 31 to February 7, 1925—18th annual show to be held in the Overland Building (185,000 sq. ft.), under the direction of the Minneapolis Automobile Trade Ass'n. Passenger cars, trucks, accessories, radio and industrial equipment.

Newark, N. J., January 10 to 17, 1925—18th annual automobile show to be held at the 113th Infantry Armory (30,000 sq. ft.), under the auspices of the Newark Automobile Dealers. Passenger cars, trucks and automotive equipment. Claude E. Holgate, Mgr., Chamber of Commerce Bldg.

Omaha, Neb., February 16 to 21, 1925—20th annual automobile show to be held at the Auditorium. Passenger cars, trucks and automotive equipment. A. B. Waugh, Mgr.

Portland, Ore., Jan. 31 to Feb. 7, 1925—17th annual show to be held in the Multnomah Block (110,000 sq. ft.), under the direction of the Automobile Dealers Association of Portland, Ore., Inc. Passenger cars, trucks, tractors, accessories and aeroplanes. Ralph J. Staehli, 16 Myler Bldg., 84 West Park Street.

Portland, Maine, Feb. 23 to 28, 1925—10th annual show to be held in the Portland Exposition Bldg. (60,000 sq. ft.), under the direction of the Portland Automobile Dealers Association. Passenger cars, trucks, tractors, accessories, adding machines, office equipment, oils and grease. Howard B. Chandler, Mgr., 3 Park Ave.

Saint Paul, Minn., January 31-February 7, 1925. Auto Trades Assn. Annual passenger car, truck and tractor show, Overland Bldg., Saint Paul, Minn. W. C. Wilmot, manager.

San Bernardino, Cal., Feb. 19 to Mar. 1, 1925—The Fifteenth National Orange Show will be held in the National Orange Show Bldg. (45,000 sq. ft.). The show will include passenger cars, trucks, tractors, and accessories. R. H. Mack, show manager, with headquarters, 215 Chamber of Commerce Bldg.

San Francisco, Cal., February 21-28, 1925—Motor Car Dealers Assn. Ninth annual passenger car, truck and tractor show, Exposition Auditorium, San Francisco, Cal. G. A. Wahlgren, manager.

Scranton, Pa., January 29 to 31, 1925—17th annual commercial car show under the auspices of the Scranton Motor Trades Assn. will be held in the Armory. Trucks, tractors and automotive equipment. Hugh B. Andrews, show mgr., Board of Trade Bldg.

Syracuse, N. Y., February 2-7, 1925—Syracuse Automobile Dealers Assn., Inc. Seventeenth annual passenger car, truck and accessory show, State Armory, Syracuse, N. Y. C. H. Hayes, manager.

Toledo, Ohio, February 2 to 7, 1925—14th annual show to be held in the Terminal Building, under the direction of the Toledo Automotive Trades Association. Passenger cars, trucks, tractors, accessories and radios. Show under the management of H. V. Buelow and T. J. Cooper, 925 Jefferson Ave.

Washington, D. C., January 24 to 31, 1925—5th annual show of the Washington Automotive Trade Association to be held at Convention Hall. Passenger cars, trucks, accessories. Rudolph Jose, show mgr., 1138 Connecticut Ave.

N. A. D. A. MEETINGS
January 26 and 29, 1925—8th annual convention to be held at Hotel La Salle, Chicago. Lynn M. Shaw, Asst. Gen. Mgr., 1138 N. Grand Ave., St. Louis, Mo.

S. A. E. MEETINGS
January 19 to 23, 1925—Annual Convention at Detroit, Mich., General Motors Bldg.
January 21, 1925—Annual Carnival scheduled for Detroit, Mich.
June 16-19, 1925—Summer Meeting, White Sulphur Springs, Greenbrier Hotel.

Bendix and Perrot Merged in Chicago

A \$3,000,000 Corporation is Organized to Take Over the Two Companies

A \$3,000,000 corporation to control the rights to the patents of the Bendix drive and of the Bendix Perrot control for the Bendix four-wheel brake has been formed through the merger of the Perrot Brake Corp. and the Bendix Engineering Works into the Bendix Corp., with headquarters in this city. The Perrot Brake Corp. heretofore has controlled American rights to the Perrot patents and the Bendix Engineering Works has controlled the patent rights of the Bendix drive. Vincent Bendix, originator and patentee of the Bendix drive, will be president of the new corporation, and J. L. Price, formerly vice-president of the Chicago Pneumatic Tool Co., will be vice-president and general manager.

The Bendix four-wheel brake will be manufactured by the Bendix Brake Co. of South Bend, a subsidiary company to the Bendix Corp. Manufacturing facilities at the South Bend plant will be greatly increased.

Commission Encourages Railroad to Take Over Buses

In its report filed with the governor and legislature the New Hampshire public service commission declared the railroads should be permitted to try other methods, such as the use of motor buses and trucks, to relieve them of the burden imposed by unprofitable branch lines.

In referring to the recent proposal of the Boston & Maine to substitute buses for the steam service the commission said "those communities which cannot support steam train service can be accommodated adequately by the operation of motor trucks and motor buses throughout the year," with the possible exception of the time when "the frost is coming out of the ground."

The commission, after suggesting the possible reduction of cars and crews on trains and the substitution of unit cars with gasoline as other means of reducing costs, said the latter experiments had not been entirely successful. It expressed the opinion that at any rate the railroads should be permitted to try out these methods. It added that if legislation is necessary to enable the railroads to do this it recommended such legislation with proper safeguards to protect the adequacy of the service.

Reasons for the conditions involving these branch lines, many of which are "being operated at a financial loss and as a burden on the rest of the system" were said to be higher costs and automobile competition.

For short journeys, the commission stated, the public prefers the automobile to the passenger train and for short haul the shipper prefers the motor truck to the freight train.

Jersey to Place New Bus Specifications Into Effect

Specifications applicable to motor buses within the jurisdiction of the New Jersey Public Utilities Commission have been promulgated by the board. With one exception, relating to emergency doors, the subject of an order issued Dec. 16 last, the new regulations will be applied to all buses placed in operation hereafter, whether as substitutes for existing buses or otherwise.

The emergency door provision covered by the board's previous order is applicable to all buses under its jurisdiction and the regulation must be made effective within 90 days. The new specifications are the result of a study of the subject made at the instance of the commission and agree in many respects with those formulated by the Motor Coach Committee of the Society of Automotive Engineers.



Mark A. Smith

Who has recently been appointed district representative of the Yellow Coach Manufacturing Co. Mr. Smith will travel eastern Pennsylvania, Delaware, Maryland and District of Columbia. He was formerly connected with the Midwest Engine Co., the Ace Motor Coach Co. and Royal Motor Coach Co., and until recently Consultant for Allen, Lewis & Co., of New York.

U. S. Department of Commerce Production Figures (Number of Machines)

	Passenger Cars		Trucks	
January	1922	1923	1924	1922
February	81,696	223,822	287,353	9,596
March	109,171	254,752	336,374	13,360
April	152,962	319,789	348,356	20,036
May	197,224	344,661	337,045	22,665
June	232,462	350,460	279,439	24,120
July	263,058	337,442	217,927	26,354
August	225,103	297,413	237,652	22,083
September	249,498	314,431	251,631	24,711
October	187,711	298,964	257,947	19,495
November	217,582	335,041	257,900	21,824
December	215,362	284,939	.....	21,967
	208,016	275,472	.....	20,394
				27,762
				*27,000

*Estimated

Good Roads Reduce Road Maintenance

Motor Vehicle Fees Should be Devoted to Highway Purposes

A. J. Brosseau, director of the N. A. C. C., at the recent Motor Roadeo dinner advocated that all motor vehicle fees should be devoted to highway purposes, and that the State should be the sole motor vehicle taxing body.

"The saving in operating cost to the motor vehicle user who travels over an improved highway," Mr. Brosseau said, "is more than enough to maintain the highway so that in effect the user who agrees to maintain it reduces his expenses enough when he travels over an improved highway so that it doesn't cost him a cent."

"On this basis," he stated, "the motor vehicle should pay for all highway maintenance and in some cases, also pay part of the construction cost."

"All special taxes on automobile users," he stated, "should be devoted to highway purposes, whether for maintenance, reconstruction, or construction, and expended under the supervision of the State highway department. The State should be the sole taxing agency."

Roy D. Chapin, chairman of the committee, presided at the dinner. He told the one hundred guests, who included editors, writers and publishers interested in highway questions, that the present year marks the real beginning of motor bus transportation, and the beginning of the safer highway.

Thomas H. MacDonald, chief of the United States Bureau of Public Roads, related the steps that are being taken in Chicago to eliminate the "No Man's Land," that exists between city and rural traffic.

Post Office to Have Over \$15,000,000 for Motor Equipment

Two supply bills for federal departments, containing items of interest to the automobile industry, were passed this week by the Senate. The first of these is the agricultural bill providing a total of \$124,788,000 for the department of which \$82,951 is to be devoted to highway research construction work. A separate item, to be administered by the Bureau of Roads, under the Department of Agriculture, known as the Dowell bill, containing a total of \$165,000,000 for road construction in 1926 and 1927 was passed last week by the Senate.

The second measure is the Post Office bill which contains a total of \$763,309,000 of which \$2,750,000 is for the air service for the purchase of new engines, planes, etc. For this purpose in 1925 a sum of \$2,600,000 was provided by Congress. A sum of \$15,400,000 was carried in the measure for the use of the automotive section of the Post Office Department, for maintenance of mail trucks, gasoline, supplies, etc. The 1926 appropriation is the same as that of 1925 for the maintenance of the automotive section.

New York Central to Expand Trucking Operations

Woodruff Outlines Railroads Experience. Experts to Study Operating Costs. Fageol Predicts Buses in Every Town of 1500

Expansion of the motor truck operations of the New York Central Railroad was predicted by G. C. Woodruff, General Freight Agent of the road, at the Motor Truck Convention.

Another feature of the meeting was the recommendation that a committee of experts from both manufacturers and operators of commercial vehicles would be appointed to get basic facts of motor truck cost operation and to outline a cost accounting system.

Mr. Gordon Lee speaking for F. R. Fageol, of the Fageol Motors Company, predicted the use of motor buses in every city in the United States of 1500 population or over.

"Based on nearly two years of experimental undertakings" said Mr. Woodruff "I feel it can be safely said that a place, and a very large place, has been found for the motor truck as a useful and highly appreciated adjunct of the railroad, particularly of the railroad of which I am connected for we feel that only a beginning has been made and that what has been done is but an indication of what can and probably will be done in the relatively near future."

Mr. Woodruff pointed out that the Harlem Division in the Hudson Division near New York the motor truck is being used to save freight train operation at the same time giving improved service on all the stations affected.

The railroad now has 50 separate trucking activities under way. These are being handled by established trucking concerns on a contract basis.

"Today in the State of California," Mr. Fageol's address noted, "There is perhaps not a city or town of 1500 population or over that is not served by interurban motor bus transportation."

Amalgamated Motors Discharges Its Last Obligation

Back taxes on the Northway property were cleaned up in full when P. H. Hansl, president of the Amalgamated Motors Corp., handed the tax collector a certified check for \$70,344.56, thereby clearing up practically all of the old indebtedness of the companies. Altogether obligations to the amount of \$275,000 have been discharged by the new interests that took over control of the property less than a year ago and it is understood that the company faces the future in excellent financial condition and with large cash balances in bank.

In concluding this transaction Mr. Hansl announced that the Rutenber motor has been taken over as a part of the amalgamated combination, including physical assets amounting to more than \$600,000. In addition to the Rutenber plant at Marion, Ind., and \$150,000 worth

of service parts acquired as a part of the deal the company also secures 3686 finished motors which will be used as the power plant for the new six-cylinder speed truck known as the Rocket, which is now being built at the local plant.

The Rutenber motor is one of the earliest six-cylinder engines built in the country and has been used in such automobile products as Paige, Overland, Roamer and American cars. When the present supply of finished motors has been exhausted it is planned to continue their production at the Northway plant.

The mayor and city commission of Leavenworth, Kan., have approved an ordinance discarding the street car system and providing for bus lines. The change is being made this month. The trolleys, which were of the Toonerville variety, will be relegated to the junk heap.

Continued Use of Horses Responsible for Congestion

General Butler of Philadelphia Now After Dobbin. Drastic Preventative Measures to Relieve Areas Imperative

Restrictions of horse drawn vehicles will form an important feature in recommendations to Council by Wm. B. Mills, Superintendent of Police and head of the Police Traffic Board created last April by General Butler, head of the Department of Public Safety of Philadelphia.

"A balky horse now can cause congestion for three or four blocks," says Superintendent Mills, "and we have reached the point where we either must have central streets filled with blocks of congested traffic or else take drastic preventative measures."

PRELIMINARY FACTS AND FIGURES OF THE AUTOMOBILE INDUSTRY FOR 1924

By Alfred Reeves, General Manager
National Automobile Chamber of Commerce

PRODUCTION

Cars and trucks	3,650,000
Cars	3,280,000
Trucks	370,000
Percentage decrease from 1923	10%
Percentage increase over 1922	38%
Production of closed cars	1,300,000
Per cent closed cars	39%
Total wholesale value of cars	\$1,994,540,000
Total wholesale value of trucks	\$284,556,000
Total wholesale value of cars and trucks	\$2,279,096,000
Tire production	45,000,000
Wholesale value of motor vehicle tire business	\$627,697,000
Total wholesale value of parts and accessories, exclusive of tires	\$872,838,000
Average retail price of car, 1924	\$814
Average retail price of truck, 1924	\$1,026
Number of persons employed in motor vehicle and allied lines	3,105,000
Special Federal excise taxes paid to U. S. Government by automobile industry in 1924	\$144,000,000

REGISTRATION

Motor vehicles registered in U. S. (approx.)	17,000,000
Motor cars	15,200,000
Motor trucks	1,800,000
World registration of motor vehicles	19,500,000
Per cent of world registration owned by U. S. A.	87%
Motor vehicle registration on farms	4,600,000
Motor cars	4,175,000
Motor trucks	425,000
Miles of improved highway	455,000
Total miles of highways in U. S.	2,941,294

MOTOR BUS AND MOTOR TRUCK

Number of motor buses produced	10,000
Number of consolidated schools using motor transportation	13,037
Number of street railways using motor buses	168
Number of buses used by street railways	2,500
Number of railroads using motor vehicles on short lines	174
Number of railroads using motor trucks as part of shipping service	33

MOTOR VEHICLE RETAIL BUSINESS IN U. S.

Total car and truck dealers	50,512
Public garages	59,989
Service stations and repair shops	67,828
Supply Stores	64,233

Philadelphia Assn. Moves for Reduced Taxes

The Entire Organization Which Includes, Distributors, Makers, Owners and Operators Acted as One

A movement to secure a reduction by the 1925 State Legislature of all automobile taxes was started at the last meeting of the Motor Truck Assn. of Phila.

That organization, including a large number of motor truck distributors, manufacturers, owners and operators of trucks, as well as representatives from affiliated lines of business, unanimously adopted the following resolution:

"Resolved, that it is the sentiment of this meeting that the license fees of all motor vehicles be reduced, and that such reduction should be in the same proportion on all such vehicles; Further Resolved, that this Association co-operate with the other automotive associations in any movement to bring about such reduction, and the officers in conjunction with the Legislative Committee of this Association be and they are duly authorized to take any steps they may deem advisable in the premises."

The meeting was told that in 1923 automobile license fees brought the state \$16,000,000, and in 1924, they would total \$20,000,000—an increase of 25 per cent. This, it was pointed out, seemed to be out of proportion to the actual needs of the state and of taxes received from other sources.

Ford Pays Employee Investors 14 Per Cent

Ford Investment Certificates, which are available only to employees of the Ford Motor Company, will pay a return of 14 per cent for the year 1924.

The guaranteed annual rate of interest on the certificates is 6 per cent. Special returns in both the first six month period, ending June 30, and in the second period ending Dec. 31st, increased the interest rate 8 per cent, making the total for the year 14 per cent.

Payment of interest was made immediately after January 1, and employees who were investors in the certificates received interest due them in connection with the payment of wages.

First Exclusive Truck Highway to be Built

New Jersey officials estimate that the cost of an exclusive truck highway which they contemplate building will be \$12,000,000. It will be thirteen miles long and will connect Newark and Elizabeth with the Jersey City entrance to and exit from the Hudson River vehicular tunnel. Part of this highway will be built through a covered cut.

The New Jersey State Highway Commission and the City Commissioners of Jersey City have reached an agreement to that effect.

Surveys have all been made and the State Highway Board will ask bids to be opened soon after the first of the year. Work is expected to start in the spring

and it is expected the highway will be ready for use when the vehicular tunnel is completed in 1926.

The covered cut is designed to carry traffic quickly from the tunnel to the outskirts of Jersey City. The roof of the cut alone will cost about \$1,000,000.

Meetings of Motor Truck Industries, Inc., to Rotate from Plant to Plant

Regular monthly meetings of Motor Truck Industries, Inc., will be held in the future at the plants of the member companies in a regular order of rotation. The plan is a marked departure from the former method of holding meetings and is designed to create the greatest possible co-operation between members and to make for renewed association activity.

What Good is Vision, Anyway?

Sixteen out of every 100 drivers of motor vehicles cross a railroad track without looking either to the right or the left.

Such is the declaration of the Department of Safety of the Baltimore and Ohio Railroad, which has just completed a nine-months' survey of road crossings. The figures showed that out of 2,185,081 drivers approaching B. & O. crossings, 351,444, or 16 per cent, failed to exercise the precaution of looking in both directions before crossing the tracks.

Eighty-three per cent of the highway crossing accidents during the first nine months of this year, occurred where vision of the tracks was unobstructed, the Department found.

The association which comprises many of the leading truck and bus manufacturing companies as well as a majority of leading unit parts makers held its January meeting under the new plan at the Garford Motor Truck Co. plant, Lima, Ohio, on the fourteenth. Each meeting in the future will be scheduled at a different plant, the directors naming the rotation. Under the plan meetings may be held in cities as far east as Plainfield, N. J., at the Spicer Mfg. Corp., and as far west as Los Angeles, the home of Moreland Motor Truck Co.

The decision to bring the meetings to the different plants of members was given the unanimous approval of directors at their meeting this week. Not only will association interest be greatly stimulated, but by making all members acquainted at first hand with the plants and processes of their associates the greatest co-operation will be achieved, directors declare. Visiting the plants, members will be given information on any details of its operation and systems as they desire and members of the factory personnel will be called in to the meetings to give additional information.

Altree Replaces Broadwell on M. & A. M. A. Board

Press of Business Caused Mr. Broadwell's Resignation. He Had Been Active Since 1915

A. H. D. Altree, vice-president of the American Bosch Magneto Corp., was elected a director of the Motor & Accessory Manufacturer's Association at a recent meeting of the Board, to take the place left vacant by the resignation of E. H. Broadwell, vice-president of the Fisk Rubber Company. Press of his company's business caused Mr. Broadwell's resignation.

The new director has been with the Bosch company for many years, and has been very active in the credit work of the M. & A. M. A.

Mr. Broadwell, the retiring director, has been a leader in the M. & A. M. A. activities for almost a decade. He served as a director from 1915 to 1921, when he was elected president. In 1922 he was re-elected to the presidential chair, and since 1923 has again had a place on the board of directors.

Century Takes Over Defiance

The Century Motor Truck Co., Defiance, O., recently took over the buildings, real estate, machinery equipment, goodwill, service and general business of the Defiance Motor Truck Co., for the purpose of perpetuating the business of the old company.

In addition to Century's line of trucks, Defiance models are also being built. The latest model of the company is a 1½ ton chassis known as Model A and selling complete with body and cab at \$985. It is obtainable in wheelbases of from 128-in. to 160-in.

Detroit Motor Valve Changes Name

A change in the name of the Detroit Motor Valve Co. to the James Motor Valve Co. became effective January 1, 1925. In deciding to change the name, directors of the company realized that a closer connection between the trade name of its product, James Valves, and the company itself was desirable from a merchandising standpoint. No other change in the company's policy will be made.

Heil Bodies and Hoists

This is the name of the new catalog recently put out by the Heil Co., Milwaukee, Wis. In the compilation of this catalog it has been the endeavor of the Heil Company to make it as complete as possible in its treatment of dumping equipment for motor trucks. The booklet is well illustrated and presents all necessary details simply tabulated for easy reference. Six of the twenty-eight pages are devoted entirely to Heil Hoists: Hydro, Mechanical, Hi-Lift, Vertical Hand Hoist, and Underneath Hand Hoist.

Michigan Gas Tax Program Not Opposed

Declare That Trucks Should Pay More

Proposed changes in the Michigan license law whereby the fees would be fixed entirely on a weight basis and the horsepower rating eliminated, were endorsed this week in a letter to the secretary of state from a committee of automobile manufacturers and officers of the State and Detroit dealer association. The committee further declared that it is not opposed to a gas tax provided the revenue is used to reduce the license fee.

In taking this stand the committee declares that it is unreservedly for the continuance of the State highway program as outlined by State officials and insists that no interference with this be tolerated.

All money derived from license fees and gas tax should be used for no other purpose than highway building and maintenance, the committee declares. The State would have available about \$10,000,000 for its yearly building program which the committee feels is more than justifiable and in fact imperative.

In stating its favor of a change to a fee based entirely on weight, the committee declares its belief that trucks should be required to pay more per hundred-weight than passenger cars. The committee calls attention to the fact that small cars are now paying at the rate of 70 cents per cwt., and if all other motor vehicles in the State were made to pay on the same basis, not more than 40 per cent would pay more than at the present time.

Eisemann Acquires Duplex Automotive Business

Of unusual interest is the announcement by the Eisemann Magneto Corp. that arrangements have been completed for the acquisition of the automotive business of the Duplex Engine Governor Co.

The entire stock of raw and finished materials, special machinery and facilities for manufacture, have been transferred to the Eisemann plant, and it is expected that but a slight interruption in production will occur.

Both the well-known Simplex and Duplex models will be continued. Production is being organized and plans made for marketing a new developed Mercury Turbine Governor very soon.

Personals

Fred M. Andrew has severed his connection with the Eisemann Magneto Corp., Brooklyn, where he served as an engineer. Plans for the future are as yet unannounced.

Fred Barker, Jr. will take active part in the development of the accounts handled by the Whittemore Co. in Chicago territory. Among the accounts are: The Ferry Cap & Set Screw Co., the Vlchek Tool Co. and the Cushman Chuck Co.

E. H. Broadwell, vice-president of the Fisk Rubber Co., has resigned as a director of the M. A. M. A. due to the pressure of other business. He is succeeded by A. H. D. Altree, vice-president of the American Bosch Corp. Mr. Broadwell has been a director of the association for a number of years and was its president in 1922 and 1923.

George H. Brown, formerly sales manager of the Mather Spring Co., has become distributor for the Gabriel Snubber Co. in the St. Louis territory.

E. P. Chalfant, chairman of the board of the Gill Manufacturing Co., was elected president of the M. A. M. A. at the first meeting of the new Board of Directors held in New York this month. He succeeds G. Brewer Griffin, manager of the Automotive Division of the Westinghouse Electric & Mfg. Co., who remains a member of the board.

H. M. Cree, well-known to the jobbing trade of the Southwest, has been appointed representative of the Cincinnati Ball Crank Co. for Texas and Oklahoma.

Dr. A. Johnson, dean of the college of engineering, University of Maryland, was re-elected chairman of the Highway Research Board of the National Research Council.

E. C. Lowney, formerly affiliated with the Firestone Tire & Rubber Co., recently joined the India Tire & Rubber Co., where he will be associated with the treasurer in supervising credits.

Joseph H. McDuffee was recently appointed assistant to the vice-president of Prest-O-Lite, Inc. His time will be devoted to the sale of batteries to vehicle manufacturers for original equipment. Mr. McDuffee is one of the pioneers of the industry, having entered it in 1899.

Carl Parker has been appointed head of the Bus & Taxicab Division of the Reo Motor Car Co., which newly organized department has transferred its offices to the bus plant.

J. L. Price is now vice-president and general manager of the newly organized Bendix Corp., Chicago, and president and general manager of the Bendix Brake Co., South Bend, Ind., a subsidiary of the Bendix Corp. Mr. Price was formerly vice president and treasurer of the Chicago Pneumatic Tool Co.

H. J. Quirk has taken active charge of the first branch office to be established by the Credit Department of the Motor and Accessory Manufacturers' Association, which is opening quarters in the first National Bank Building, Detroit. Mr. Quirk was formerly assistant treasurer of the Standard Steel & Bearings Co., Inc.

A. T. Rankin has joined the sales force of the Oakes Co., Indianapolis. He was formerly territorial representative of the Amco Manufacturing Co.

Anton S. Rosing has been appointed publicity manager of the Armco Culvert & Flume Manufacturers' Association, Middlebown, Ohio. He was formerly connected with the Portland Cement Association, Chicago, in a similar capacity.

Francis C. Russell has been appointed manager of the Rochester branch of the North East Service Co., succeeding G. A. Johnson, who is to take charge of the New York branch.

E. L. Schmock was recently appointed sales manager of the American Tire & Rubber Co., Akron, Ohio.

Otto A. Stahl, formerly of the New York branch of the General Motors Truck Corp., has been appointed president and general manager of the company to succeed W. L. Day. Mr. Day will continue as vice-president and member of operation committee of the company at the request of President Alfred P. Sloan, Jr., of General Motors Corp.

S. T. Thompson, secretary and general manager of the Duplex Engine Governor Co., Inc., has been elected vice-president of the Duplex Condenser and Radio Corp. Mr. Thompson, in his new capacity, will continue to have complete charge of the factory operations of the new company.

Allen D. Turner has been appointed manager of the bus publicity division of the Westinghouse Electric & Mfg. Co. Mr. Turner who entered upon his new duties December 15th has complete charge of the New England section.

J. H. Tuttie, recently resigned from the Westcott Motor Car Co., where he served in the capacity of chief engineer for several years to join the Checker Cab Manufacturing Co., of Kalamazoo, as chief engineer.

Paul St. Elmo Webb has joined the Federal Motor Truck Co. in Chicago. He was formerly assistant manager of the Diamond T Motor Car Co., Chicago.



Ten Diamond T, Model 75, One-Ton Delivery Trucks Were Recently Added to Marshall Field & Company's Delivery Fleet

The chassis with the exception of the radiator and hood is the standard model 75, fast, light chassis that first appeared in 1923. Two different body types were provided.

For full name and address of manufacturer and information regarding complete line see page 51

Trade Name and Model	General	Engine	Fuel System	Clutch	Gearset	Rear Axle	Gear Ratios		Front Axle Make and Model	Springs (Make)	Wheels (Make)	Chassis Weight (lbs.)	
							Type	Model	Make and Model	No. of Forward Speeds	Universal Speeds (Make)	Final Drive	
1 Ton—con'd													
Noble A-76.....	1875	130	34x5*	34x5*	Bud W TU	33x45 1/2	22.5 L	PC Non	Chi	Bla	Bla	3400	
O. K. O.....	1675	131	33x5*	33x5*	Bud W TU	33x45 1/2	22.5 L	PC Non	Own	Har	Har	3250	
Ogen A2.....	1675	125	34x5*	34x5*	Con N	33x45	22.5 L	PS Non	Chi	Pic	Pic	3100	
Patriot 7R.....	1475	129	30x3 1/2*	32x4 1/2*	Own	33x45	22.5 L	PS Non	Mod	Own	Own	2975	
Penn.....	750	122	35x5*	35x5*	Con N	33x45	22.5 L	PS Non	Own	Own	Own	2500	
Pioneer AA.....	1550	132	34x5*	34x5*	GBS	33x45	22.5 L	PS Non	Own	Wol	Wol	2700	
Rainer R-29.....	2150	133	35x5*	35x5*	Con N	33x45	22.5 L	PS Non	Own	Jon	Jon	3000	
Sandow GA.....	120	120	34x5*	34x5*	Con-S-R-6	33x45	22.5 L	PS Non	Chi	Per	Per	2750	
Standard W-10.....	140	135	30x5*	30x5*	WIS SU	33x45 1/2	22.5 L	PC Non	Own	Sal D	Sal D	3000	
Schacht.....	110	132	30x5*	30x5*	WIS SU	33x45 1/2	22.5 L	PC Non	Own	She	She	3100	
Stewart 16.....	1195	120	33x5*	33x5*	WIS SU	33x45	22.5 L	PC Non	Own	She	She	3100	
Transport 15.....	1195	120	32x4 1/2*	32x4 1/2*	Con N	33x45	22.5 L	PS Non	Own	Ind	Ind	3100	
Triangel AA.....	1286	123	32x4 1/2*	32x4 1/2*	Con N	33x45	22.5 L	PS Non	Own	Det	Det	3100	
United Highway.....	128	122	32x4 1/2*	32x4 1/2*	H-8 7000	33x45	19.6 L	PS Non	Own	Law	Law	2700	
Wadebeut S.....	2400	152	34x5*	34x5*	Con 8R	33x45	22.5 L	PC Non	Own	Col 3000	Col 3000	2600	
Wilcox AA.....	1900	130	35x5*	35x5*	Bud W TU	33x45	22.5 L	PC Non	Own	She	She	2260	
Yellow Cab T-1.....	1450	130	33x5*	33x5*	Con V4	33x45	22.5 L	PS Non	Own	She	She	3300	
Yellow Cab T-1-5.....	1550	130	33x5	33x5	Con V4	33x45	22.5 L	PS Non	Own	Mat	Mat	3600	
1 1/4 Ton													
Autocar F.....	2400	97	34x6*	34x6*	Own 2	4x4 1/2	18.1 L	SP Non	Own	Own F	Own F	3800	
Autocar G.....	2500	120	34x6*	34x6*	Bud W TU	33x45	22.5 L	PC Non	Own	Own F	Own F	3900	
Clinton 20.....	2070	150	30x5*	30x5*	Con N	33x45	22.5 L	PS Non	Own	Own	Own	3450	
Clydesdale 10.....	118	138	34x5*	34x5*	Con N	33x45	22.5 L	PS Non	Own	Own	Own	3100	
Clydesdale T-03.....	138	138	34x5*	34x5*	Con N	33x45	22.5 L	PS Non	Own	Own	Own	3100	
Diamond T-03.....	132	132	36x5 1/2*	36x5 1/2*	Hin 700	33x45 1/2	22.5 L	PC Non	Own	Mat	Mat	3850	
Eagle 101.....	1875	134	33x5*	33x5*	Con J-4	33x45	22.5 L	PC Opt	Own	Chu	Chu	3800	
Federal R-3.....	132	132	33x5*	33x5*	Lye CT	33x45	22.5 L	PC Opt	Own	Dis	Dis	2950	
Hahn B2.....	1800	136	34x5*	34x5*	Her OX	33x45	22.5 L	PC Non	Own	Per	Per	2900	
Krebs J-24.....	140	129	34x5*	34x5*	Con J4	33x45	22.5 L	PC Opt	Own	Van	Van	3230	
8 Laramée-Deyo X-2.....	1810	138	34x5*	34x5*	Con J-4	33x45	27.3 L	PC Opt	Own	She	She	3350	
Macar EX.....	132	132	34x5*	34x5*	WIS SU	4x5	9 H	PC Non	Own	Sal 1525E	Sal 1525E	3400	
Master 11.....	132	132	33x5*	33x5*	Bud W TU	33x45 1/2	22.5 L	PC Non	Own	Van	Van	3200	
Memorine HT.....	2000	122	32x4 1/2*	32x4 1/2*	Own R	4x5	25.6 H	PC Non	Own	Det	Det	3250	
Northway Rocket.....	1290	138	32x4 1/2*	32x4 1/2*	Own F	3x4 1/2	23.4 L	PS Non	Own	Det	Det	3250	
880 F.....	1185	128	124*	124*	Own F	3x4 1/2	27.2 D	PS Non	Own	Shu	Shu	3250	
Republic 75.....	128	128	33x5*	33x5*	Rugger 20R	4x5	22.5 L	PC Non	Own	Mat	Mat	2705	
Standard 75.....	132	132	34x5*	34x5*	880 F	4x5	25.6 L	PC Non	Own	Mat	Mat	2700	
Stoughton C.....	138	138	34x5*	34x5*	Own 20R	4x5	25.6 L	PC Non	Own	Mat	Mat	2800	
U. S. U.....	131	131	30x5	30x5	Her OX	4x5	25.6 L	PC Non	Own	Van	Van	3580	
United 25.....	131	131	30x5	30x5	WIS SU	4x5	9 H	PC Non	Own	She	She	3500	
1 1/2 Ton													
Acme 20L.....	136	136	34x5*	34x5*	Con 8R	3x4 1/2	27.3 L	PC Non	G&O	Shu 312	Shu 312	3500	
Armedier 30.....	144	148	34x4 1/2*	34x4 1/2*	Her OX	4x5	25.6 L	PC Non	Own	Am	Am	4400	
Bridgport A-24R.....	2360	144	34x4 1/2*	34x4 1/2*	Bud K TU	33x45	22.5 L	PS Non	Own	Col 7018	Col 7018	4760	
Autocar F.....	2400	97	34x5*	34x5*	Own 2	4x5	18.1 L	PS Non	Own	Am	Am	3800	
Autocar G.....	2500	120	34x5*	34x5*	Own 2	4x5	18.1 L	PS Non	Own	Col 5058	Col 5058	4000	
Available JH.....	145	145	36x3 1/2*	36x3 1/2*	Her OX	4x5	25.6 L	PC Non	Own	She	She	4000	
Bessener H2.....	144	144	36x3 1/2*	36x3 1/2*	Con 8R	3x4 1/2	27.2 D	PS Non	G&O	Shu 310	Shu 310	4135	
Bridgport A-24.....	2360	144	34x4 1/2*	34x4 1/2*	Bud K TU	33x45	22.5 L	PS Non	Own	Per	Per	4135	
Bronkwy S12.....	2500	138	34x4 1/2*	34x4 1/2*	Own 2	4x5	18.1 L	PS Non	Own	She	She	4150	
Commerce 14B.....	2175	140	34x4 1/2*	34x4 1/2*	Hin 300	3x4 1/2	27.3 L	PS Non	Own	Shu 350	Shu 350	4160	
Commerce Super 11.....	1495	142	34x4 1/2*	34x4 1/2*	Con S4	3x4 1/2	22.5 L	PS Non	G&O	Shu 350	Shu 350	4160	
Concord EO.....	2500	135	34x5*	34x5*	Bud K TU	33x45	22.5 L	PS Non	Own	She	She	4160	
Corbit D-22.....	2150	140	34x5*	34x5*	Own 2	4x5	18.1 L	PS Non	Own	Van	Van	4160	
Day-Elder AN.....	128	128	34x5*	34x5*	Con JR	4x5	18.1 L	PS Non	Own	Mat	Mat	4160	
Diamond T-1.....	144	144	34x5*	34x5*	Con JR	4x5	18.1 L	PS Non	Own	Row	Row	4050	
Dixie B.....	2660	145	34x5*	34x5*	Her OX	4x5	18.1 L	PS Non	Own	Way	Way	2500	
Duplex GH.....	138	138	34x5*	34x5*	Bud W TU	33x4 1/2	22.5 L	PS Non	Own	S.P.	S.P.	4300	
Federal S-23.....	144	144	36x3 1/2*	36x3 1/2*	Con J-4	3x4 1/2	27.3 L	PS Non	Own	Pen	Pen	3900	
Federal S-23.....	144	144	36x3 1/2*	36x3 1/2*	Con J-4	3x4 1/2	27.3 L	PS Non	Own	Gen	Gen	3900	

Front Drive FT.....	1280	120	34x5*	34x5*	Bud CTU	34x5	22.5 L	PC Non	Own	Own	Own	33860
Front Drive FT.....	1280	120	34x5*	34x5*	Bud CTU	34x5	22.5 L	PC Non	Own	Own	Own	33860
Front Drive FT.....	1280	120	34x5*	34x5*	Bud CTU	34x5	22.5 L	PC Non	Own	Own	Own	33860
Front Drive FT.....	1280	120	34x5*	34x5*	Bud CTU	34x5	22.5 L	PC Non	Own	Own	Own	33860
Front Drive FT.....	1280	120	34x5*	34x5*	Bud CTU	34x5	22.5 L	PC Non	Own	Own	Own	33860

Ton

For full name and address of manufacturer and information regarding complete line see page 51

21/2 Total

Auton. H. 3012-11000
Auton. K. 3020-11000
Available JH-254-
Rowe C. 3688-1152
Rowe Q. 3688-1152
Rowe R. 3688-1152
Rowe S. 3688-1152
Rowe T. 3688-1152
Rowe U. 3688-1152
Rowe V. 3688-1152
Rowe W. 3688-1152
Rowe X. 3688-1152
Rowe Y. 3688-1152
Rowe Z. 3688-1152

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Basenbauer J ²	36x4	Hin HA500	434 x36	25.9 L	PC Pie	Stn	Zen	Chi	Bus	Non	Per	Shu 510	A	
Bethlehem L.....	3195 145	36x8	Own D-3	434 x36	25.6 L	PC Pie	Stn	Zen	Chi	Bus	Non	Mat	Shu D33	A
Bethpage B.....	3085 60	36x4	Bud ETU	434 x36	25.9 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Bridgport B.....	2990 155	36x8	Con K-4	434 x36	25.2 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Brinton K.....	2975 147	34x4	34x6	434 x36	25.2 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Broadway K.....	3075 156	34x4	34x6	434 x36	25.2 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Clyadade S.....	2860 148	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Colunada G.....	3000 152	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Commerce 25D.....	3600 150	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Corbit B.....	3000 144	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Day-Elder DN.....	160	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Diamond-T U2.....	3460 154	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Dixon K.....	3400 Opt	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Duplex AC.....	160	34x5 ¹	36x8	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Federal U3.....	157	30x4 ¹	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Gary E25.....	3250 148	30x4 ¹	30x10	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
G.M.C. K-41A.....	148	30x4 ¹	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
G.M.C. K-41B.....	158	30x4 ¹	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
G.M.C. K-41C.....	191 ^{1/2}	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Gramm-Bernstein S.....	144	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Grass-Premier S.....	3050 167	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Hahn K Spec.....	160	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Harvey WFB.....	2950 160	30x4 ¹	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Hawkeye.....	2800 160	34x6*	36x8*	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Hag H4.....	2175 121	36x6	40x8	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Independent F2.....	2940 150	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Indiana 25.....	156	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Indiana 26.....	159	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Kankakee H.....	3200 154	36x5 ¹	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Kelly-Springfield K76.....	3600 154	36x5 ¹	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Kimball AC.....	3960 Opt	36x5 ¹	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Kiesel.....	3850 163	36x5 ¹	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Klein.....	3850 163	36x5 ¹	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Lange K.....	3650 153 ^{1/2}	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Larabee K-5.....	3550 176 ^{1/2}	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Luedinghaus.....	3400 145 ^{1/2}	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Mack AB.....	3400 146 ^{1/2}	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Mack AB.....	3850 160	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Master 41.....	154	34x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Menominee D.....	2875 144	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Nelson & LeMoon G3.....	3050 168	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Netco DH.....	3020 168	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Noble D-51.....	3350 162	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Order E2.....	160	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
O.K. A.....	3250 150	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Orein C9.....	3200 160	36x4	30x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Ohlisch BO.....	3875 146	40x8	40x8	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Ohlisch BBO.....	3975 165	40x8	40x8	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Power F.....	150	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Rainer R-20.....	3550 165	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Rainer R-20.....	3650 153 ^{1/2}	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Rugger 40-H.....	148	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Sandoff W25A.....	3350 156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Sandoff W25B.....	3350 174	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Schacht G.....	3400 156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Schieden Unit 50.....	149	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Schieden Unit 50.....	3575 143 ^{1/2}	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Ruggers 40-H.....	148	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Standard 2 ^{1/2} -3 ^{1/2} K.....	147	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Standard 2 ^{1/2} -3 ^{1/2} K.....	3800 200	38x7	34x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Stirling 7 ^{1/2}	156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Stewart L.....	3800 170	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Super Truck 50.....	3300 166	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Super Truck 50.....	3785 150	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Twin City BW.....	2800 156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Union F1W & FW.....	3500 156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Union F1W & FW.....	3150 156	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
United 50.....	3800 136	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Wachusett L.....	3600 166	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Walker-Johnson B.....	3000 136	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Ward Lawrence 2B.....	3100 161	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Wiles CC.....	3000 136	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Winter 44.....	3654 146	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A
Witt-Will S.....	2650 146	36x4	36x8 ¹	434 x36	25.6 L	PC Pie	Stn	Chi	Bus	Non	Mat	Ros	Shu D-140B	A

For full name and address of manufacturer and information regarding complete line see page 51

Trade Name and Model	General		Front Wheelbase (inches)	Rear Wheelbase (inches)	Tire Size #	Model	Make and Model	Type	Final Drive	High Reduction in	Low Reduction in	Brakes, Location	Front Axle Make and Model	Rear Axle	Gear Ratios	Spring Gear (Make)	Wheels (Make)	Tires (Make)	Chassis Weight (lbs.)		
	Chassis Price	Standard Wheelbase (inches)																			
3 Ton																					
Aene K.	200	36x6	Con 6B	27.2	7L	PC	Dup	G&O	4	1/2x5 1/2	33.7	7L	Tim 6518	W	F	6.80	35.3	A	Tim 1540B	W	6900
Aene 60L	152	36x4 1/2	Con K-4	27.2	7L	PC	Dup	G&O	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	9.25	45.1	A	Tim 1540B	W	4830
Aene 60L	156	36x4 1/2	Con L-4	32.4	7L	PC	Dup	G&O	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	42.1	A	Tim 1540B	W	5050
Autocar H.	3450	114	34x6	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	7.72	46.3	A	Own H	W	5500
Autocar K.	3560	138	34x6	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	7.72	46.3	A	Own H	W	5600
Brockway K.	3630	138	34x6	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	7.75	41.4	A	Tim 1544	W	5925
Brockway K.	3638	153	36x4	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.5	A	Tim 1542B	W	5130
Columbia K.	3550	184	36x5	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	9.50	45.5	A	Tim 1542B	W	5130
Columbia K.	3450	150	36x5	25.6	6L	SP	Pha	Own	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	10.30	49.4	A	Tim 1544	W	5900
Concord J.L.	3250	158	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.90	35.6	B	Own B	W	5900
Forschitt R.	3250	158	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.90	35.6	B	Own B	W	6160
Day-Elder CN.	150	36x4 1/2	Bud EBU	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	B	Own B	W	5900
Double Drive TT.	4000	144	36x6	28.9	9L	PP	Mon	Bus	4	1/2x5 1/2	28.9	9L	Tim 6560	W	F	9.25	45.4	B	Tim 1526	W	6250
Fageol 340.	4000	150	36x5	28.9	9L	PP	Mon	Bus	4	1/2x5 1/2	28.9	9L	Tim 6560	W	F	8.75	46.8	A	She 370	W	4800
Fageol 360 Spec.	5250	152	36x6*	28.9	9L	PP	Mon	Bus	4	1/2x5 1/2	28.9	9L	Tim 6560	W	F	8.50	45.4	A	Tim 1520	W	6300
Forschitt R.	4200	124	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6200
Gary Y30.	3550	150	36x6	28.9	9L	PP	Mon	Bus	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Gothredon 60.	152	36x4 1/2	Bud EBU	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Gramm-Bernard 30.	3500	150	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Guilher H.	3750	149	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Hahn L.	3750	149	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
International 63.	3750	140	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Renworth K-S.	3750	160	36x4 1/2	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Macnear H-1.	163	36x4 1/2	Bud EBU	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Macnear H-3.	3900	174	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Moreland AX.	3900	174	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
National AC-Bus.	4750	187	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.50	45.4	A	Tim 1542B	W	6300
Republi 19.	4150	135	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Rowe GSW.	3300	150	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Ruggies 40HIB.	3800	150	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Schacht.	3800	154	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Solden Unit 53.	163	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Service 61.	163	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Soughton F. 60-D.	156	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Traffic 6000.	2145	135	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Taylor D.	3300	150	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
United 60.	156	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
U.S. R.	156	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Winter 54.	3500	152	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Winter 54.	3705	168	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Bechleim M.	164	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Brockway R. 12.	163	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Clydesdale 6.	163	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Diamond T. K.	170	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200	
Dixon A.	4070	160	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Doris K7.	4400	174	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Duplex E.	3225	162	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200
Gary Y 28.	4265	162	36x5	28.9	9L	PC	Han	Lon	4	1/2x5 1/2	33.7	7L	Tim 6560	W	F	8.40	40.3	B	Own B	W	6200

Ton

For full name and address of manufacturer and information regarding complete line see page 51

Trade Name and Model	Chassis Price	Standard Wheelbase (inches)	Front Wheelbase (inches)	Rear Wheelbase (inches)	General		Engine		Clutch		Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model		Spurings Gear (Make)		Wheels (Make)		Chassis Weight (lbs.)	
					Make and Model	Pro. and Strk	Bore and Stroke (inches)	N.A.C.C. Rated H.P.	Univ. of Forward Speeds	Location	Make and Model	Type	Final Drive	High Reduction in	Total Reduction in	Low	Brakes, Location	Front	Make and Model	Front	Make and Model	Front	Make and Model	Chassis Weight (lbs.)
5 Ton																								
Amer. LaFrance V.	5500 Opt.	36x6	40x6	36x6	Own 5R	38.1L	PS	Own	Bos	Own	D	Own 5R	W	W	10.0	64.5	B	Own 5R	Day	Non	9600			
Afterburn 24E.	5500 174	38x6	40x7	38x6	Con B-7	4 1/2x6	40.1L	FP	Pie	Own	D	B-L 60 Max	A	4	Own	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9600		
Afterburn 24E-LWB	5650 204	38x6	40x7	38x6	Con B-7	5x6	40.1L	FP	Pie	Own	D	B-L 60 Max	A	7	Own	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9600		
Autocar V.	4800 156	34x6	36x5	36x5	Own Y	4 1/2x5 1/2	28.9L	SP	Pha	Own	P	Own B	A	4	Own	Own Y	9.89	Tim 1732B	Day	Non	7200			
Autocar M.	4800 120	34x6	36x5	36x5	Own Y	4 1/4x5 1/2	28.9L	SP	Pha	Own	P	Own B	A	4	Own	Own Y	9.89	Tim 1732B	Std	Non	7200			
Available H5	4650 190	36x6	40x6	36x6	Her T-3	5x6	40.0L	FP	Pie	Own	P	B-L 60	A	4	Own	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9500		
Brockway T.	5000	174	36x6	40x6	Con B-7	4 1/2x6	40.0L	FP	Pha	Bus	Str	Eis	L-N	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9500	
Chicago 50	5140 204	163	38x6	40x6	Con B-7	4 1/2x6 1/2	32.4L	FP	Pha	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9400	
Clinton 120L.	5250 204	38x6	40x6	38x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9400	
Clydesdale 4.	5250 177	38x6	40x6	38x6	Con B-7	4 1/4x6	36.1L	FP	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9400	
Corbit AA	4750 178	38x6	40x6	38x6	Her T-3	5x6	40.0L	FP	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9400	
Day-Elder EN.	170	170	38x5	40x6	Con B-5	4 1/2x6	36.1L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8800	
Diamond T S.	4490 160	180	38x6	40x6	Con B-5	4 1/2x6	36.1L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8700	
Federal X-2.	4490 160	163	38x6	40x6	Con B-5	4 1/2x6	36.1L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8700	
Garfield 68D.	4490 162	38x6	40x6	38x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8700	
Gary B6.	4850 182	163	38x6	40x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9250	
G.M.C. K-101A.	4850 182	163	38x6	40x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9250	
G.M.C. K-101B.	4850 182	163	38x6	40x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9250	
Gothield 100.	169	36x6	40x6	36x6	Own K101	4 1/2x6	32.4L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9700	
Grammer-Benz's 60-60.	168	36x6	40x6	36x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8500	
Guidliner-Benz's.	5250 170.	169	36x6	40x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8500	
Hahn M.	4250 152	36x5	40x12	36x5	Own K101	4 1/2x6	32.4L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Hahn M. 2.	4750 174	36x5	40x12	36x5	Con B-5	4 1/2x6	32.4L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Indiana 51.	182	36x6	40x12	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9160	
Indiana 62.	182	36x6	40x12	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9160	
International 103.	160	36x5	40x12	36x5	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9700	
Kenworth RS.	5500 178	36x6	40x6	36x6	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9700	
King Zeitzer.	4525 168	36x6	40x6	36x6	Con B-5	4 1/2x6	32.4L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8600	
Kleiber.	5330 192	36x6	40x6	36x6	Con B-5	4 1/2x6	32.4L	FP	Mon	Bus	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9400	
Krobs B120.	180	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	7460	
Luedinghaus.	160	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9500	
Maccar GI.	186	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8975	
Mack AC.	5500 158	38x5	40x6	38x5	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Master 61.	5160 Opt.	38x5	40x6	38x5	Bud BTU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Menominee J3.	4850 160	36x6	40x7	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9650	
Moreland RX.	5000 192	36x6	40x7	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9175	
Nelson & LeMoore G5.	4500 Opt.	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9685	
Nelsonway C5.	4500	175	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9725	
Open G.	4725 180	186	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8500	
Pierce-Arrow BD.	5000 162	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8600	
Rover FW.	4550 170	175	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8600	
Sandow L.	175	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	7800	
Sanford W50.	5100 174	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Schacht.	4600 168	36x5	40x6	36x5	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	8200	
Sedent Unit 90.	164	36x6	40x6	36x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9175	
Sterling EHD.	5400 168	164	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9175	
Sterling ELD.	5750 174	164	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9175	
Super Truck 100.	6000 174	164	36x6	40x6	Wau EU	5x6	30.0L	PC	Pha	Own	Str	Eis	Non	B-L	4	Spi	Tim 6760	Tim 6760	Mer	Gen	Std	Non	9175	
Transport 75.	4500 164	164	36x6	4																				

Petroline Tractor-Trucks

DETAILED MOTOR

This Table Comprises Motor Bus Chassis Which Are Designed
For Other Chassis Which Are Recommended and Adaptable for Bus Use See Models

Line Number	MAKE AND MODEL	Seating Capacity	GENERAL						Make and Model	Number of Cylinders Bore and Stroke	ENGINE			ELECTRICAL SYSTEM				NORMAL SPEED				
			Weights		Tread		Rated Horse Power N.A.C.C.	Valve Arrangement					Battery		Generator and Starter Make	Model						
			Chassis Price	Chassis Only	Chassis with Body	Recommended Body Allowance		Front			Rear	Carburetor Make	Fuel Feed	Ignition System Make	Model							
1	Ace C.	30	4800	6500	11500	5000	204	70	80 1/2	Cont 6B	6-3 1/2 x 6	33.7 L	PC	Own	Zen	V	3HVX8X	6-110	35	6.0		
2	Acme K.	30	6900	9900	3000	200	58 1/2	74	Cont 6B	6-3 1/2 x 5	33.7 L	PC	Own	V	Eis	Rem	USL	SJRT4	6-111	30	5.7	
3	Bridgeport 45.	30	3850	5500	...	178	60	72	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Own	V	Eis	Del	Wil	...	6-120	30	5.7	
4	Brookway EB.	20	...	3200	...	156	56	56	Wisc SU	4-4 x 5	25.6 I	PC	G&O	Zen	V	Eis	Bos	...	...	...	...
5	Brookway J3.	25	6400	9280	2880	185	66 1/2	71	Cont 6B	6-3 1/2 x 5	33.7 L	PC	Own	V	Eis	L-N	Exi	...	6-105	35	6.0	
6	Clinton 65B.	30	4075	5925	8700	2725	184	58 1/2	58 1/2	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Own	V	Eis	...	...	...	...	...
7	Clinton 65S.	35	4800	6600	9600	3000	220	68	76 1/2	Buda YBU	4-4 1/2 x 6	32.4 L	PC	Own	Zen	V	Bos	Wil	SJRT30	6-153	35	6.0
8	Commerce 60.	25	5000	...	3000	329	68	75	Con 6B	6-3 1/2 x 5	43.6 I	PC	Lon	Zen	V	Bos	...	...	...	...
9	Commerce 65.	29	6000	...	3500	242	68	75	Con 14H	6-4 1/2 x 5 1/2	48.6 L	FC	Lon	Zen	V	Bos	L-N	SJRT 30	12-153	35	5.0	
10	Day-Elder 20.	20	...	5200	...	2500	168	56	58	Cont K4	4-4 1/2 x 5 1/2	28.9 L	FP	Bus	Zen	V	Eis	...	...	...	...
11	Day-Elder 25.	25	5600	...	3000	180	58	58 1/2	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Bus	Zen	V	Eis	...	...	...	...
12	Day-Elder 30.	30	6000	...	3500	192	68 1/2	74	Cont 6B	6-3 1/2 x 5	33.7 L	PC	Bus	Zen	V	Eis	...	...	...	...
13	Duplex FB.	23	5500	...	3000	181	58	72	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Mod	Zen	V	Eis	...	...	...	...
14	Fageol Parlor Car.	22	5365	6450	10200	...	218	70	76 1/2	Has 50	4-4 1/2 x 5 1/2	28.9 I	PC	Lon	Zen	V	Del	...	...	...	...
15	Fageol Street Car.	29	6315	7000	10350	...	230	70	70	Has 75	6-3 1/2 x 5	43.6 I	PC	Mod	Zen	V	Del	...	...	...	...
16	Federal.	25	5450	...	2500	190	60	60	Cont 6B	6-3 1/2 x 5	33.7 L	PC	...	...	...	...	...	...	...	...
17	Fifth Ave. J.	29	6900	5660	8285	2575	172	68 1/2	71 1/2	Yell EZ	4-4 x 6	25.6 X	PC	Own	Zen	V	Eis	N-E	STRN27	6-185	35	6.0
18	Fifth Ave. L.	51	8860	6670	...	174 1/2	67	77 1/2	Yell EZ	4-4 x 6	25.6 X	PC	...	...	...	...	...	...	...	...
19	Garford 51D.	29	6500	9900	3400	187	68	75 1/2	Buda YBU	4-4 1/2 x 6	32.4 L	PC	Own	Str	V	...	...	...	...	...
20	Garford 726.	25	4800	7800	3000	168	56	65 1/2	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Own	Str	V	...	...	...	...	...
21	Graham Bros. JB.	21	1640	3700	...	158	56	56	Dodge	4-3 1/2 x 4 1/2	24.0 L	PS	McC	Ste	V	N-E	Wil	STRN6	6-190	35	5.4	
22	Graham Bros. XB.	17	1515	3555	...	140	56	56	Dodge	4-3 1/2 x 5 1/2	24.0 L	PS	McC	Ste	V	N-E	Wil	STRN6	6-190	35	5.4	
23	Guilder 30.	30	4500	5600	8800	3600	191	64	70	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	FP	G&O	Zen	V	L-N	Wil	SJRT28	12-104	30	5.0
24	International 33.	18	...	...	...	150	56	56 1/2	Own 33.	4-4 1/2 x 5	22.5 I	Sp	...	...	...	...	...	...	...	...
25	International 53.	29	...	...	...	190	64 1/2	65	Own 53.	4-4 1/2 x 5	25.9 I	Sp	...	...	...	...	...	...	...	...
26	Kissel.	18	4500	5200	7780	2400	202	64 1/2	66	Own 4-36	4-4 1/2 x 5 1/2	32.4 L	PC	...	...	...	...	...	...	...	...
27	Larrabee X-2.	16	1910	3450	4850	1400	155	56	56	Cont 8R	6-3 1/2 x 4 1/2	27.3 L	PC	Fed	Zen	V	Bos	...	...	...	...
28	Larrabee XH3.	21	3600	4670	7670	3000	186	62	66	Cont 6B	6-3 1/2 x 5	33.7 L	PC	Fed	Zen	V	Bos	...	...	...	...
29	Mack AB.	24	4350	...	230 1/2	68	63 1/2	Own AB	4-4 1/2 x 5	28.9 L	PC	...	...	...	...	...	...	...	...	...	...
30	Mack AB.	25	4250	...	196	68	63 1/2	Own AB	4-4 1/2 x 5	28.9 L	PC	...	...	...	...	...	...	...	...	...	...
31	Mason Road King C.	21	2150	3900	7400	3500	168	56	56	Her OX	4-4 x 5	25.6 L	PC	...	...	...	...	...	...	...	...
32	Master.	30	6000	9500	3500	194	59	59	Buda EBU	4-4 1/2 x 5 1/2	28.9 L	PC	Chi	Zen	V	Eis	...	...	...	...
33	Menominee T.	16	2600	4290	6400	2100	175	56	56	Wisc Y	6-3 1/2 x 5	27.3 H	PC	...	...	...	...	...	...	...	...
34	Menominee DB.	25	4400	6020	9100	3200	186	68	73	Wisc TAU	4-4 x 6	25.6 L	PC	Own	Zen	V	Bos	...	...	...	...
35	Moreland RC.	16	2280	3850	5850	2000	180	56	57 1/2	Herc OBX	4-4 x 5	25.6 L	PC	...	...	...	...	...	...	...	...
36	Moreland EC.	20	3780	4590	7590	3000	178	61	58	Cont K4	4-4 1/2 x 5 1/2	27.3 L	FP	...	...	...	...	...	...	...	...
37	Moreland AC.	25	4700	5660	9160	3500	187	68	69	Cont L4	4-4 1/2 x 5 1/2	32.5 L	FP	...	...	...	...	...	...	...	...
38	Pierce-Arrow Z.	25	4600	6100	9100	3000	196	68	75 1/2	Own	6-4 x 5 1/2	30.6 L	PC	Own	Zen	V	Eis	...	...	...	...
39	Pierce-Arrow 2.	30	4750	6200	9700	3500	220	68	75 1/2	Own	4 x 5 1/2	38.0 T	FP	...	...	...	...	...	...	...	...
40	Reo W.	21	2470	3860	7360	3500	176	56	57 1/2	Own W	6-3 1/2 x 5 1/2	24.3 F	PS	Own	Sch	V	N-E	Wil	SJRT6	6-153	37	10.0
41	Republic 81.	15	...	...	2000	185	60	58	Lyc	4-4 x 5	25.6 L	PC	...	...	...	...	...	...	...	...
42	Selden 52.	30	7200	10200	3000	195	68	74	Cont L4	4-4 1/2 x 5 1/2	32.4 L	FP	...	...	...	...	...	...	...	...
43	Selden.	30	7200	10200	3000	195	68	74	Cont 6B	6-3 1/2 x 5	33.8 L	PC	...	...	...	...	...	...	...	...
44	Sterling GB2.	29	6100	10750	4550	198	64 1/2	58 1/2	Own CU	4-4 1/2 x 5 1/2	30.6 L	PC	Own	Zen	V	Eis	...	Gou	ASLR632	6-132	35	6.20
45	Six Wheel Bus.	27	...	...	194	...	...	...	Cont 6B	6-3 1/2 x 5	50.0	...	...	...	...	...	...	...	...	...	...
46	Union CG.	30	6500	10000	3500	233 1/2	60	60	Cont 6	4-4 1/2 x 6	...	...	...	...	...	...	...	...	...	...	...
47	Union EC.	19	4500	7000	2500	198	58	58	Cont 6	4-3 1/2 x 4 1/2	...	...	...	...	...	...	...	...	...	...	...
48	United.	30	...	10000	3000	220	64 1/2	66	Buda	6-4 x 5 1/2	38.0 L	PC	...	...	...	...	...	...	...	...	...
49	Ward La France 3B	25	4950	6300	9700	3400	196	58	65 1/2	Wau DU	4-4 1/2 x 6 1/2	32.4 L	PC	Bus	Str	V	RBo	...	...	...	...
50	White 50A.	25	4950	5395	...	198	58 1/2	67 1/2	Own 50A	4-4 1/2 x 5 1/2	28.9 L	FP	...	...	...	...	...	...	...	...	...
51	Yellow Coach Z.	67	...	...	192	71	73 1/2	Yell EZ	4-4 x 6	25.6 X	PC	...	...	...	...	...	...	...	...	...	...

Name and Model Number	Total Weight Resting on Four Tires	Chassis Weight—Exclusive of Battery	Minimum Load Capacity	Maximum Load Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
Autocar E 1F.	2400	...	...	...	...	...	G-E	G-E	...	R	Own	34x4	34x5	Ross	107	60
Autocar E 2D.	2800	...	...	...	...	...	G-E	G-E	...	R	Own	34x4	34x6	Ross	120	60
Autocar E 3H.	3200	...	...	...	...	...	G-E	G-E	...							

BUS SPECIFICATIONS

and Sold Exclusively for Passenger Transportation

Having Sign (\$) in the "COMMERCIAL CAR SPECIFICATIONS"

Line Number	TRANSMISSION			REAR AXLE						TIRES AND WHEELS				DIMENSIONS (in.)									
	Clutch	Gearset		Universal	Final Drive		Type	Total in High	Total in Low	Service Brake Type & Location	Front Axle Make and Model	Steering Gear	Tires (in.)		Wheels—Make	Rims—Make	Overall						
		Location	Number of Forward Speeds		Make	Final Drive							Front	Rear	Front	Rear	Length	Width					
35	6.0																						
30	5.7																						
25	5.0																						
30	3.0																						
35	3.0																						
5	B. L.	B. L. 55	U	4	Pet	Tim 6516	W _c	F	5.4	26.6	I-R	Tim 1550	Ros	36x6	35x7	Day	Fir	27 1/2	34	316	90	9 1/2	
2	P. B. & B.	Cot RU	U	4	Blo	Tim 6511	W _c	F	6.8	35.3	I-R	Tim 1540B	Ros	36x6*	36x6†	Bud	Fir	27	38	312	90	9 1/2	
3	D. B. L.	B. L. 50	U	4	Spi	Tim 6560	W _c	F	6.7	...	I-R	She Speed	Ros	36x6*	36x6†	Bud	...	31 1/2	...	...	...	...
4	D. B. L.	B. L. 35	U	4	Spi	Col 52028	SP	F	5.1	...	E-R	Col 5084	Gem	30x5*	32x6†	Ind	Fir	28 1/2	...	...	...	...
5	D. B. L.	B. L. 55	U	4	Spi	Col 3D	Ig	F	7.0	...	E-D	Shu 610B	Gem	36x6*	36x6†	Sew	Fir	27 1/2	31 1/2	295 1/4	84	10	
25	D. B. L.	B. L. 55	S	4	M-E	Tim 6566	W _c	F	6.5	34.8	I-R	Tim 1544B	Ros	36x6*	36x6†	Bud	Fir	30	37	270	75 1/2	9 1/2	
7	D. B. L.	B. L. 55	S	4	M-E	Tim 6516	W _c	F	6.7	36.1	I-R	Tim 1550	Ros	36x6*	36x6†	Bud	Fir	26	40	286	90	7	
8	B. L. 70	B. L. 60H	A	4	Blo	Tim 6516	W _c	F	6.8	27.3	I-R	Tim 1550	Ros	36x6	36x6†	MM	Fir	20 1/2	...	307	88 1/2	7	
9	B. L. 70	B. L. 60H	A	4	Blo	Tim 6516	W _c	F	5.4	21.6	I-R	Tim 1550	Ros	36x6	36x6†	MM	Fir	20 1/2	...	320	88 1/2	7	
35	10	D. B. L.	B. L. 35	3	Spi	Tim 6462	W _c	F	6.5	21.8	I-R	Col 7018	Gem	36x6*	38x7†	Van	Fir	32	30	237	70 1/2	11	
11	D. B. L.	B. L. 51	U	4	Spi	Tim 6566	W _c	F	6.7	36.1	I-R	Tim 1544	Gem	36x6*	40x8†	Van	Fir	32	30	260	75 1/2	11	
12	D. B. L.	B. L. 51	U	4	Spi	Tim 6511S	W _c	F	6.8	36.4	I-R	Shu 610	Gem	36x6*	36x6†	Van	Fir	25	27	271 1/2	90	6 1/2	
13	D. B. L.	B. L.	U	4	Pet	Vul 4	W _c	F	6.5	32.1	I-R	Shu	Ros	34x5	34x5†	Mot	Fir	27	28	268	82	9	
14	D. B. L.	B. L. 50	U	4	Spi	Tim 6466	W _c	F	4.6	19.7	I-R	Tim 1524	Ros	36x6*	36x6†	Bud	...	19 1/2	38	312	89	7 1/2	
15	D. B. L.	B. L. 55	U	4	Spi	Tim 6466	W _c	F	4.6	19.7	I-R	Tim 4550	Ros	36x6	38x7	Bud	...	20 1/2	38 1/2	324	89	7 1/2	
16	P. B. & B.	Det 4400	S	4	Spi	Tim 6566	W _c	F	6.7	39.8	I-R	Own	Gem	36x6*	36x8†	Smi	Fir	30	28	266 1/2	10	10	
17	P. Own	Own J	4	Spi	Tim 6412	W _c	F	5.4	21.6	I-R	Tim 1523	Ros	36x6	36x6†	Own	...	29 1/2	31	277	87 1/2	7		
18	P. Own	Own L	4	Spi	Own L	Ig	F	6.6	...	E-D	Own L	Ros	36x5†	36x5†	Own	...	26	...	...	...	...
19	D. Own	Own 51D	S	4	Spi	Tim 6511G	W _c	F	5.4	26.1	I-R	Tim 1550	Ros	36x6*	36x6†	Day	Fir	28 1/2	30	295	91	7	
20	D. Own	Own 726	S	4	Spi	Tim 6560	W _c	F	5.4	21.6	I-R	Own	Ros	32x6*	32x6†	Bud	Fir	32	30	236	78 1/2	7 1/2	
21	D. Dodge	Dodge	U	3	UP	Own	SP	1/2	6.3	26.3	-R	Eat	Dodge	32x6	32x6	Smi	Fir	26	29 1/2	242 1/2	66	8	
22	D. Dodge	Dodge	U	3	UP	Own	SP	1/2	6.3	26.3	-R	Eat	Dodge	32x6	32x6	Smi	Fir	26	26	206 1/2	66	8	
23	D. B. L.	B. L. 51	U	4	M-E	W _c 68C	R	5.8	...	E-D	Shu 5550B	Ros	36x6	36x6†	Bud	...	26	70	300	83	11		
24	D. Own	Own 33	3	Own	Tim 633	Ig	F	...	I-R	...	...	Own	...	36x6	36x6†	Own	...	...	...	...	...	...
25	D. Own	Own 53	U	4	Own	Own 53	Ig	F	...	I-F	...	Own	...	36x6*	36x6†	Bud	...	34 1/2
26	D. B. L.	B. L. 35	U	4	Spi	W _c 60B	R	5.8	19.0	-R	Shu 610	Ros	34x7*	34x7*	Whi	Gdy	24	...	252	76	8		
27	D. B. L.	B. L. 31	U	3	Spi	Sal D	Be	7.7	27.6	E-R	Sal	Gem	34x5	34x5†	Ind	Fir	29	27	220	70	11		
28	D. B. L.	B. L. 31	U	3	Spi	She	W	5.5	26.4	I-R	Shu 5550B	Ros	32x6	32x6†	Bud	...	25	28	262	86	9		
29	D. Own	Own AB	U	4	Spi	Own AB	R	6.7	21.5	I-R	Own AB	Own	36x6*	36x6†	Bud	...	24 1/2	32 1/2	310	84	10 1/2		
30	D. Own	Own AB	U	4	Spi	Own AB	R	6.7	21.5	I-R	Own AB	Own	32x6*	32x6†	Bud	...	24 1/2	28 1/2	304	84	8 1/2		
31	B&B	Cam	A	3	U-M	Fli	SP	5.3	22.6	E-R	Fli	Lav	30x5	30x5†	Bud	...	24	27	244 1/2	75	7 1/2		
32	D. Ful	Ful GU7	U	4	Spi	W _c 25A	R	7.6	37.0	-R	Shu 610	Ros	36x6	40x8	StM	Fir	26	...	33 1/2	...	...	...
33	D. Det	Cot AAU	U	3	Spi	W _c 40R	R	...	...	I-R	...	Ros	32x6*	32x6†	Whi	...	23 1/2	...	...	...	...	...
25	D. Det	Cot AU	U	4	Spi	W _c 120K	R	6.1	32.0	I-R	Tim 1550	Ros	36x6*	36x6†	Ind	Fir	26	30	256	86	10		
35	D. B. L.	B. L. 30	U	3	Pet	Tim 5512	W _c	1/2	5.5	22.0	E-R	Tim 1250	Ros	32x6	32x6	Own	...	23 1/2
25	D. B. L.	B. L. 51	U	4	Pet	Tim 6410	W _c	F	6.0	32.1	I-R	Tim 1550	Ros	34x5*	34x5†	Bud	...	24 1/2
25	D. B. L.	B. L. 51	U	4	Pet	Tim 6111	W _c	F	6.0	32.1	I-R	Tim 1550	Ros	36x6*	36x6†	Bud	...	25 1/2
50	3.0	Own W	A	4	Spi	Own W	W _c	F	6.0	32.0	E-D	Own	36x5	36x5†	Bud	...	28	37 1/2	282	89 1/2	8 1/2		
37	10	Own	Own W	A	4	Spi	Own W	W _c	6.0	32.0	-D	Own	36x6	36x6†	Bud	...	28	40	303	89 1/2	8 1/2		
35	...	...	S	3	Spi	Own W	SP	5.7	21.0	E-R	Own W	Own	32x6	32x6†	Bud	...	26 1/2	31	197	87	9	
25	6.2	Ful	U	3	Spi	Eat	Ig	6.2	25.0	E-D	Eat	Jac	34x7	34x7	Van	Fir	21	...	270 1/2	67 1/2	7 1/2		
35	6.2	D. B. L.	B. L.	4	Spi	Tim	W _c	F	7.7	31.0	I-R	Tim	Gem	36x5	36x5	Arc	Fir	29 1/2	33	309	91	7	
35	6.20	D. B. L.	B. L.	4	Spi	Tim	W _c	F	7.7	31.0	-R	Tim	Gem	36x5	36x5	Arc	Fir	29 1/2	33	309	91	7	
44	D. B. L.	B. L. 50	U	4	Spi	Tim 6566	W _c	F	5.4	28.9	I-R	Tim 1544B	Ros	36x6*	36x6†	Bud	...	34 1/2	...	...	...	10 1/2
45	B-L	B-L	U	...	Blo	Tim 6212	W _c	F	...	...	I-R	Tim 1550	Ros	32x6*	32x6†	Bud	...	...	...	...	...	...
46	Ful	Ful 4	...	...	...	W _c SF	R	...	...	...	...	Tim	Jax	32x6	32x6†	Bud	...	...	...	...	...	...
47	Ful	Ful 4	...	...	...	W _c SF	SP	...	...	...	...	Shu	Jax	34x7	34x7	...	...	...	...	...	...	...
48	D. B. L.	B. L. 35	U	4	Blo	W _c 66C	R	1/2	5.8	...	I-R	Shu 610	Ros	36x8	36x8	Whi	Fir	25	...	265 1/2	84	7 1/2	
49	D. B. L.	B. L. 55	A	4	Spi	Tim 6566	W _c	F	6.0	32.1	I-R	Col	Ros	36x6*	36x6†	Bud	Fir	28	36	304	75 1/2	9 1/2	
50	Own	Own 50A	U	4	Spi	Own 50A	R	1/2	5.6	23.3	-R	Own	Own	36x6	36x6†	Bud	Fir	28 1/2	36	274 1/2	81 1/2	9 1/2	
51	P. Own	Own 2	S	4	...	...	...	...	6.2	...	I-F	...	Own	34x5	34x5†	...	...	...		

KEY OF ABBREVIATIONS

Wheelbase:

"More than one wheelbase furnished.

Tires:

\$\$—Unless marked otherwise all tires are solids.
 *—Pneumatics standard equipment.
 †—Pneumatics at Extra Cost.
 ‡—Dual on Rear.

Engine:

Bud—Buda Co., Harvey, Ill.
 Con—Continental M. Corp., Detroit, Mich.
 D—Head & Side
 GBS—Golden, Belknap & Swartz Co., Detroit, Mich.
 H—Overhead.
 Her—Hercules M. Mfg. Co., Canton, Ohio.
 Hin—Hinkley Motors, Inc., Detroit, Mich.
 H-S—Herschell-Spillman Motor Co., North Tonawanda, N. Y.
 H-C—Holl Scott Motor Co., Berkeley, Cal.
 L—L-Head.
 Lyc—Lycoming M. Corp., Williamsport, Pa.
 Mid—Midwest Eng. Co., Indianapolis, Ind.
 FP—Full Pressure to all bearings including wrist pins.
 PC—Pressure to all crankshaft and connecting rod bearings.
 PS—Pressure with splash.
 SP—Circulating splash.
 T—T-Head.
 Wau—Waukesha M. Co., Waukesha, Wis.
 Wis—Wisconsin M. Mfg. Co., Milwaukee, Wis.
 Yell—Yellow Sleeve Valve Eng. Works, East Moline, Ill.
 X—Sleeve.

Governor:

Con—Continental M. Corp., Detroit, Mich.
 Dup—Duplex Eng. Gov. Co., Brooklyn, N. Y.
 Han—Handy Gov. Co., Detroit, Mich.
 Hin—Hinkley Motors, Inc., Detroit, Mich.
 McK—E. R. Klemm, Chicago, Ill.
 Mon—Monarch Gov. Co., Detroit, Mich.
 Non—Not Supplied.
 Pha—Pharo Mfg. Co., Detroit, Mich.
 Pie—Pierce Governor Co., Anderson, Ind.
 Sim—Duplex Eng. Gov. Co., Brooklyn, N. Y.
 Wau—Waukesha M. Co., Waukesha, Wis.

Radiator:

Bre—Bremer-Tully Mfg. Co., Chicago, Ill.
 Bus—Bush Mfg. Co., Hartford, Conn.
 Cor—Corcoran Mfg. Co., Cincinnati, Ohio.
 Chic—Chicago Mfg. Co., Chicago, Ill.
 E&M—English & Mersick Co., New Haven, Conn.
 Fed—Fedders Mfg. Co., Buffalo, N. Y.
 Fle—Flexo Mfg. Co., Los Angeles, Cal.
 G&O—G. & O. Mfg. Co., New Haven, Conn.
 Har—Harrison Rad. Corp., Lockport, N. Y.
 Idl—Ideal Sheet Metal Works, Chicago, Ill.
 Lon—Long Mfg. Co., Detroit, Mich.
 McC—McColl Rad. & Mfg. Co., Detroit, Mich.
 McK—McKinnon Dash Co., Buffalo, N. Y.
 Per—Racine Radiator Co., Racine, Wis.
 R-T—Rome-Turney Rad. Co., Rome, N. Y.
 S-J—Shotwell-Johnson Co., Minneapolis, Minn.
 Spl—Splittorf Electrical Co., Newark, N. J.
 Stn—Standard Radiator Co., Inc., Springfield, N. Y.
 US—U. S. Cartridge Co., Lowell, Mass.
 Whe—Wheeler Rad. & Mfg. Co., E. Cleveland, Ohio.

Fuel System:

Car—Carter Carburetor Co., St. Louis, Mo.
 Ens—Ensign Car. Co., Los Angeles, Cal.
 G—Gravity.
 Hol—Holley Carburetor Co., St. Louis, Mo.
 Joh—Johnson Co., Detroit, Mich.
 Mar—Marvel Carburetor Co., Flint, Mich.
 P—Pressure.
 Ray—Beneke & Kropf Mfg. Co., Chicago, Ill.
 Sco—Briscoe Devices Corp., Pontiac, Mich.
 She—Wheeler Schebler Carburetor Co., Indianapolis, Ind.
 Ste—Detroit Lubricator Co., Detroit, Mich.
 Str—Stromberg Motor Devices Co., Chicago, Ill.
 Til—Tillotson Mfg. Co., Toledo, Ohio.
 V—Vacuum.
 Zen—Zenith-Detroit Corp., Detroit, Mich.

Electrical System:

‡—Generator & Starter at Extra Cost.
 †—Starter not Supplied, Generator at Extra Cost.
 A-C—Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Apo—Apollo Magneto Corp., Apollo, Pa.
 A-K—Atwater Kent Mfg. Co., Phila., Pa.
 A-L—Electric Auto-Lite Corp., Toledo, O.

Ber—Ericsson Mfg. Co., Buffalo, N. Y.
 Bij—Bijur Motor Appliance Co., Hoboken, N. J.

Bos—American Bosch Magneto Co., Springfield, Mass.

Con—Connecticut Telephone & Electric Co., Meriden Conn.

Del—Dayton Engin. Lab. Co., Dayton, Ohio.

Dyn—Owen Dyneto Corp., Syracuse, N. Y.

Eis—Eisemann Magneto Corp., Brooklyn, N. Y.

G&D—Gray & Davis, Boston, Mass.

Kin—Kokomo Electric Co., Kokomo, Ind.

K-W—K W Ignition Co., Cleveland, Ohio.

L-N—Leece-Neville Co., Cleveland, O.

N-E—North East Elec. Co., Rochester, N. Y.

Non—Not Supplied.

POL—Prest-O-Lite Co., Inc., Indianapolis, Ind.

Rem—Remy Electric Co., Anderson, Ind.

RBo—Robert Bosch Magneto Co., New York, N. Y.

Sci—Scintilla Magneto Co., New York, N. Y.

Sim—Simms Magneto Co., E. Orange, N. J.

Spl—Splittorf Electrical Co., Newark, N. J.

Wag—Wagner Elec. Mfg. Co., St. Louis, Mo.

Wes—Westinghouse Elec. & Mfg. Co., Springfield, Mass.

USL—U. S. Light & Heat Corp., Niagara Falls, N. Y.

Clutch & Gearset:

*—Other ratios optional.

A—Amidships.

B—B—Borg & Beck Co., Chicago, Ill.

B-L—Brown-Lipe Gear Co., Syracuse, N. Y.

Cot—Cotta Transmission Corp., Rockford Ill.

Cov—Covert Gear Co., Lockport, N. Y.

Det—A. J. Detlaff Co., Detroit, Mich.

D-G—Detroit Gear & Machine Co., Detroit, Mich.

Dod—Dodge Brothers Co., Detroit, Mich.

D—Disk.

Dun—Dundore Mfg. Co., Reading, Pa.

Durs—Durston Gear Corp., Syracuse, N. Y.

Ful—Fuller & Sons Mfg. Co., Kalamazoo, Mich.

G-L—Grant Lee Gear Corp., Cleveland, O.

Har—Hartford Auto Parts Corp., Hartford, Conn.

Hoo—Hoosier Clutch Co., Muncie, Ind.

H-S—Hele-Shaw, Merchant & Evans Co., Philadelphia, Pa.

J—Unit with Jackshaft.

K—Cone.

M-E—Merchant & Evans Co., Phila., Pa.

M-M—Mechanics Mach. Co., Rockford, Ill.

Mun—Muncie Gear Works, Muncie, Ind.

O—Disk in Oil.

P—Plate.

R—Rear Axle.

U—Unit with Engine.

W-G—Warner Gear Co., Muncie, Ind.

Universal:

Blo—Blood-Bros. Mach. Co., Allegan, Mich.

Det—Universal Products Co., Detroit, Mich.

Har—Hartford Auto Parts Corp., Hartford, Conn.

M-M—Mechanics Machine Co., Rockford, Ill.

M-E—Merchant & Evans Co., Phila., Pa.

Pet—Cleveland Universal Parts Co., Cleveland, Ohio.

Pic—Carl Pick Co., West Bend, Wis.

Sne—Snead & Co., Jersey City, N. J.

Spic—Spicer Mfg. Corp., S. Plainfield, N. J.

The—Thermoid Rubber Co., Trenton, N. J.

U-M—Universal Machine Co., Bowling Green, Ohio.

U-P—Universal Products Co., Detroit, Mich.

Front and Rear Axles:

1/2—Semi-Floating.

3/4—Three-Quarter Floating.

At—Atlas Axle Co., Wilmington, Del.

Cla—Clark Equip. Co., Buchanan, Mich.

Col—Columbia Axle Co., Cleveland, O.

Con—Continental Axle Co., Edgerton, Wis.

C—Chain.

B—Straight Bevel.

D—Dead.

Eat—Eaton Axle Co., Cleveland, Ohio.

Fl—Flint Motor Axle Co., Flint, Mich.

F—Floating.

Huc—Sheldon Axle & Spring Co., Wilkes-Barre, Pa.

I—Internal Gear.

LM—L. M. Axle Co., Cleveland, Ohio.

P—Spur Gear.

R—Double Reduction.

Rus—Russel Motor Axle Co., Detroit, Mich.

S—Spiral Bevel.

Sal—Salisbury Axle Co., Jamestown, N. Y.

She—Sheldon Axle & Spring Co., Wilkes-Barre, Pa.

Shu—Shuler Axle Co., Inc., Louisville, Ky.

Std—Standard Parts Co., Cleveland, O.
 Tim—Timken Detroit Axle Co., Detroit, Mich.

Tor—Eaton Axle & Spring Co., Cleveland, Ohio.

Vul—Vulcan Motor Axle Co.

Wal—Walker Axle Co., Chicago, Ill.

W—Worm.

Wis—Wisconsin Parts Co., Oshkosh, Wis.

Brake:

A—Rear Wheels only.

B—Drive Shaft and Rear Wheels.

C—Front and Rear Wheel.

D—Jackshaft and Rear Wheels.

Springs:

Am—American Auto Parts Co., Detroit, Mich.

Arm—General Motors Co., Pontiac, Mich.

Bea—Bea Spring Co., Inc., Massillon, O.

Bet—Betts Bros. Sp. Co., Inc., San Francisco, Cal.

Cha—Champion Auto Sp. Co., St. Louis, Mo.

Del—D. Delany & Son, Newark, N. J.

Det—Detroit Steel Prod. Co., Detroit, Mich.

G—Garden City Sp. Works, Chicago, Ill.

Har—Harvey Sp. & Forging Co., Racine, Wis.

I-C—Iron City Spring Co., Pittsburgh, Pa.

Lig—Liggett Sp. & Axle Co., Monongahela, Pa.

Mar—Maremont Mfg. Co., Chicago, Ill.

Mat—Matther Spring Co., Toledo, O.

Mer—E. R. Merrill Spring Co., New York.

Pen—Penn Sp. Works, Baldwinsville, N. Y.

Per—Perfection Sp. Co., Cleveland, O.

Phi—Phila. Sp. Works, Phila., Pa.

P.S.—Point Sp. Co., Pittsburgh, Pa.

She—Sheldon Axle & Sp. Co., Wilkes-Barre, Pa.

S. S.—Standard Steel Sp. Co., Coraopolis, Pa.

Ste—Sterling Spring Co., Pittsburgh, Pa.

Tem—Temme Sp. Corp., Chicago, Ill.

Tut—Tuthill Sp. Co., Chicago, Ill.

U. S.—United States Sp. Co., Los Angeles, Cal.

Vul—Jenkins Vule. Sp. Co., Richmond, Ind

Steering Gear:

CAS—C. A. S. Products Co., Columbus, O.

Dit—Ditwiler Mfg. Co., Galion, Ohio.

Dod—Dodge Bros. Co., Detroit, Mich.

Gem—Gemmer Mfg. Co., Detroit, Mich.

Jac—Saginaw Products Co., Saginaw, Mich.

Lav—Lavine Gear Co., Milwaukee, Wis.

M—Muncie Gear Works Corp., Muncie, Ind.

Ros—Ross Gear & Tool Co., Lafayette, Ind.

Sag—Saginaw Products Co., Saginaw, Mich.

Woh—Wohlrab Gear Co., Racine, Wis.

Wheels:

Arc—Archibald Wheel Co., Lawrence, Mass.

A-W—Auto Wheel Co., Lansing, Mich.

Bim—Bimel Spoke & Auto Wheel Co., Portland, Ind.

Bud—Budd Wheel Co., Phila., Pa.

Cla—Clark Equip. Co., Buchanan, Mich.

Day—Dayton Steel Foundry Co., Dayton, Ohio.

Det—Detroit Panel & Plywood Co., Detroit, Mich.

Dis—Distel Wheel Corp., Detroit, Mich.

Hay—Hayes Wheel Co., Jackson, Mich.

Hoo—Hoopes, Bro. & Darlington, Inc., West Chester, Pa.

Ind—Indestructible Wheel Co., Lebanon, Ind.

Int—Interstate Foundry Co., Chicago, Ill.

Jon—Jones, Phineas & Co., Newark, N. J.

Kel—Kelsey Wheel Co., Detroit, Mich.

MM—Michigan Malleable Iron Co., Detroit.

Mot—Motor Wheel Corp., Lansing, Mich.

Mun—Muncie Wheel Co., Muncie, Ind.

Nor—Northern Wheel Corp., Alma, Mich.

Pru—Prudden Wheel Co., Lansing, Mich.

Roy—Royer Wheel Co., Aurora, Ind.

Sch—Schwarz Wheel Co., Phila., Pa.

Smi—Smith Wheel, Inc., Syracuse, N. Y.

StM—St. Marys Wheel Co., St. Marys, O.

Std—Standard Wheel Co., Terre Haute, Ind.

Van—Van Wheel Corp., Oneida, N. Y.

Wal—Walker Axle Co., Chicago, Ill.

Way—Wayne Wheel Co., Newark, N. Y.

Whit—Whitcomb Wheel Co., Kenosha, Wis.

Rim Equipment:

Fir—Firestone Steel Products Co., Akron, Ohio.

Gdy—Goodyear Tire & Rubber Co., Akron, Ohio.

Hay—Hayes Wheel Co., Jackson, Mich.

Jax—Jaxon Steel Prod. Co., Jackson, Mich.

Kel—Kelsey Wheel Co., Detroit, Mich.

Mil—Miller Rubber Co., Akron, Ohio.

Non—None Supplied.

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

*Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line
Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE	ENGINE								BRAKE LINING						FRAME										
	Piston Rings		Carburetor		Upper Hose		Lower Hose		Fan Belt		Service			Emergency			Length		Width		Over All		Clearance at Lowest Point of Chassis		
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All			
Ace 40-1½	3	1	1	1	V	7	1½	8	1½	40 ½	2	F	12	3½	½	4	12	3½	½	4	122½	76 ½	215½	32	9
Ace 60-3	3	1½	1½	1½	V	10	2	15	1½	42 ½	2	F	13½	3½	½	4	13½	3½	½	4	84½	241	...	...	9½
Acme 20L-1½	3	1½	1½	1½	V	8	1½	11	1½	40	1½	F	12	3½	½	2	12	3½	½	2	108½	63 ½	200	34	10½
Acme 40-2	4	1	1	1	V	11½	1½	12½	1½	39 ½	1½	F	12	3½	½	2	12	3½	½	2	123½	74 ½	208	34	9½
Acme 40L-2	4	1½	1½	1½	V	11½	1½	12½	1½	39 ½	1½	F	12	3½	½	2	12	3½	½	2	123½	74 ½	214½	34	10
Acme 60-3	4	1½	1½	1½	V	11½	1½	12½	1½	39 ½	1½	F	13	3½	½	2	13	3½	½	2	132½	79 ½	223½	34	10
Acme 60L-3	4	1½	1½	1½	V	11½	1½	12½	1½	41 ½	1½	F	13	3½	½	2	13	3½	½	2	140½	79 ½	235½	34	10
Acme K (Bus)	3	1½	1½	1½	V	12½	1½	12½	1½	34 ½	1½	F	15½	3½	½	2	15½	3½	½	2	220½	127 ½	312	41½	6
Acme 90-4½	4	1½	1½	1½	V	10	1½	10	1½	41 ½	1½	F	15½	3½	½	2	15½	3½	½	2	150½	95 ½	243	36	10½
Acme 90L-4½	4	1½	1½	1½	V	10	1½	10	1½	40 ½	1½	F	15½	3½	½	2	15½	3½	½	2	153½	96 ½	255	37	10½
Acme 125-6½	4	1½	1½	1½	V	10	1½	10	1½	40 ½	1½	F	18	4	½	2	18	4	½	2	159½	99 ½	261	37	10
American-LaFrance W	3	1½	1½	1½	V	5½	1½	10½	1½	36	2	F	11	1½	½	4	17	3½	½	4	132	81 ½	236 ½	33	10
American-LaFrance W	3	1½	1½	1½	V	5½	1½	10½	1½	36	2	F	11	1½	½	4	17	3½	½	4	156	98 ½	260 ½	33	10
American-LaFrance W	3	1½	1½	1½	V	5½	1½	10½	1½	36	2	F	11	1½	½	4	17	3½	½	4	180	110 ½	284 ½	33	10
American-LaFrance Y	3	1½	1½	1½	V	9	1½	11½	1½	42	2	F	11½	8	½	2	21	4	½	4	144½	89 ½	244 ½	35½	9
American-LaFrance Y	3	1½	1½	1½	V	9	1½	11½	1½	42	2	F	11½	8	½	2	21	4	½	4	168½	103 ½	268 ½	35½	9
American-LaFrance Y	3	1½	1½	1½	V	9	1½	11½	1½	42	2	F	11½	8	½	2	21	4	½	4	210½	124 ½	310 ½	35½	9
American-LaFrance V	3	1½	1½	1½	V	9	1½	11½	1½	42	2	F	11½	8	½	2	21	4	½	4	144½	90 ½	244 ½	36	9
American-LaFrance V	3	1½	1½	1½	V	9	1½	11½	1½	42	2	F	11½	8	½	2	21	4	½	4	192½	113 ½	292 ½	35½	9
Armeleder 30-1½	3	1½	1½	1½	V	10	1½	16½	1½	33 ½	1½	F	13	3½	½	4	11½	3½	½	4	210½	125	310 ½	36	10
Armeleder 50-2½	4	1½	1½	1½	V	12	2	17½	1½	35 ½	2	F	13	3½	½	4	13	3½	½	4	Opt	71 ½	215 ½	32	9½
Armeleder 50-2½	4	1½	1½	1½	V	12	2	17½	1½	35 ½	2	F	13	3½	½	4	13	3½	½	4	Opt	77 ½	228 ½	32	10
Atterbury 24-R	4	1½	1½	1½	V	10½	1½	16	1½	34 ½	1½	V	11½	3½	½	4	11½	3½	½	4	119½	76	211½	34	9½
Atterbury 22C-2½	4	1½	1½	1½	V	10½	1½	16	1½	40 ½	1½	F	13½	3½	½	4	13½	3½	½	4	129½	78 ½	225	34	9½
Atterbury 22D-3½	4	1½	1½	1½	V	10½	1½	16	1½	40 ½	1½	F	15½	3½	½	4	15½	3½	½	4	142½	93 ½	242	37½	10½
Atterbury 24E	4	1½	1½	1½	V	10½	1½	16	1½	42 ½	1½	F	17	4	½	4	17	4	½	4	159½	89 ½	263	37½	10½
Autocar XXI-F-1½	4	1½	1½	1½	V	5	1½	9½	1½	...	...	F	16½	2½	½	4	16½	2½	½	4	91	67	156	34	9½
Autocar XXI-G-1½	4	1½	1½	1½	V	5	1½	9½	1½	...	...	F	18½	2½	½	4	18½	2½	½	4	114	90	179	34	9½
Autocar XXVI-M-4	3	1½	1½	1½	V	3½	1½	12	1½	49 ½	2	F	23½	2½	½	4	23½	2½	½	4	139½	80 ½	223½	34½	10½
Autocar XXVI-L-6	3	1½	1½	1½	V	3½	1½	12	1½	49 ½	2	F	20½	2½	½	4	20½	2½	½	4	175½	116 ½	259 ½	34 ½	10
Autocar XXVII-H-3	3	1½	1½	1½	V	3½	1½	12	1½	47 ½	2	F	20½	2½	½	4	20½	2½	½	4	131½	76	213 ½	34 ½	10½
Autocar XXVII-K-3	3	1½	1½	1½	V	3½	1½	12	1½	47 ½	2	F	20½	2½	½	4	20½	2½	½	4	155½	100	237 ½	34 ½	10½
Available J-1½	4	1½	1½	1½	V	11	1½	14	1½	40	2	F	48	2½	½	2	36	2½	½	2	120	80 ½	201 ½	32	9
Available J-2	4	1½	1½	1½	V	12	1½	14	1½	40	2	F	48	2½	½	2	36	2½	½	2	120	84 ½	212	32	9
Available J-2½	3	1½	1½	1½	V	11	1½	14	1½	40	2	F	13½	3½	½	4	13½	3½	½	4	144	85 ½	226 ½	32	9
Available J-3½	4	1½	1½	1½	V	12	1½	14	1½	42	2	F	16	3½	½	4	16	3½	½	4	168	106 ½	254 ½	36	9
Available J-H5	3	1½	1½	1½	V	12	2	16	2	40 ½	2	F	18	4	½	4	18	4	½	4	168	112 ½	263 ½	38	9
Bessemer G-1	3	1	1	1	V	11½	2½	10	2½	42	½	V	46	2½	½	2	44	2½	½	2	98½	58 ½	182 ½	34	...
Bessemer H-2-1½	3	1	1	1	V	11½	2½	10	2½	43	½	V	46	2½	½	2	44	2½	½	2	116	76	203	34	...
Bessemer H-2½	3	1½	1½	1½	V	12	1½	5	1½	36 ½	1½	F	18½	2½	½	4	48	2½	½	4	142½	92 ½	229	34	...
Bessemer K-2-4	3	1½	1½	1½	V	11½	2½	10	2½	39 ½	1½	F	55	3½	½	2	33	4½	½	2	157½	108	249	38	...
Bethlehem KN-1	3	1	1	1	V	8½	2½	8	2½	35 ½	1½	F	20½	1½	½	2	20½	1½	½	2	89½	56 ½	175	32 ½	10½
Bethlehem GN-2	3	1	1	1	V	8½	2½	8	2½	35 ½	1½	F	51	2½	½	1	37	2½	½	1	116½	74	208 ½	34 ½	9½
Bethlehem L	3	1	1	1	V	8½	2½	9½	2½	36 ½	1½	F	51	2½	½	1	37	2½	½	1	134½	81 ½	226 ½	34 ½	8½
Bets J-3-1	3	1	1	1	V	12	1½	17	1½	33 ½	1½	F	11	3½	½	4	11	3½	½	4	126	90	215	34	10
Bets D-3½	3	1	1	1	V	12	1½	17	1½	33 ½	1½	F	39	2½	½	4	12	3½	½	4	Opt	118	...	34	...
Brinton C-1½	3	1	1	1	V	11	1½	13	1½	33	1½	F	39	2½	½	4	11	3½	½	4	118	...	...	33	...
Brinton D-2½	3	1	1	1	V	11	1½	13	1½	33	1½	F	13	3½	½	2	13	3½	½	2	135½	...	...	33	...
Brockway S-12-1½	3	1	1	1	V	10½	2½	5½	2½	39	1½	F	10	3½	½	4	10	3½	½	4	118	72	118 ½	32	...

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE							BRAKE LINING					FRAME											
	Piston Rings		Carburetor		Upper Hose	Lower Hose	Fan Belt	Service		Emergency		Length	Width	Driver's Seat	Length	Width								
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Length	Width				
Commerce 11-2000.	3	1	1	1	V	10	2	10	2	44	50	2	1	2	48 $\frac{1}{2}$	2	1	2	92 $\frac{1}{2}$	193	34			
Commerce 14B-3000.	4	1	1	1	VV	10	2	9 $\frac{1}{2}$	1 $\frac{1}{2}$	39 $\frac{3}{4}$	11 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	11 $\frac{1}{2}$	3	1 $\frac{1}{2}$	2	4	117	210	34		
Commerce 25B-5000.	4	1	1	1	VV	9 $\frac{1}{2}$	1 $\frac{1}{2}$	9 $\frac{1}{2}$	1 $\frac{1}{2}$	42	13	3 $\frac{1}{2}$	1	4	13	3	1 $\frac{1}{2}$	4	4	132	228 $\frac{1}{2}$	34		
Concord E-1.	4	1	1	1	VV	7	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	12	3	1	4	12	3	1 $\frac{1}{2}$	4	4	12	32 $\frac{1}{2}$	32 $\frac{1}{2}$		
Concord G-2.	4	1	1	1	VV	7	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1 $\frac{1}{2}$	4	4	12	32 $\frac{1}{2}$	32 $\frac{1}{2}$		
Concord H-2.	4	1	1	1	VV	7	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	12	3 $\frac{1}{2}$	1	4	12	3	1 $\frac{1}{2}$	4	4	12	32 $\frac{1}{2}$	32 $\frac{1}{2}$		
Concord J-2 $\frac{1}{2}$.	4	1	1	1	VV	7	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1 $\frac{1}{2}$	4	4	12	32 $\frac{1}{2}$	32 $\frac{1}{2}$		
Concord JL-3.	4	1	1	1	VV	7	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1 $\frac{1}{2}$	4	4	12	32 $\frac{1}{2}$	32 $\frac{1}{2}$		
Corbitt S- $\frac{1}{2}$.	3	1	1	1	H	8	2	14	2	38	16 $\frac{1}{2}$	1 $\frac{1}{2}$	1	4	16 $\frac{1}{2}$	1 $\frac{1}{2}$	1	4	103	59	196	34	11 $\frac{1}{2}$	
Corbitt E-1.	3	1	1	1	H	9	2	2	41	16 $\frac{1}{2}$	16 $\frac{1}{2}$	1 $\frac{1}{2}$	1	4	16 $\frac{1}{2}$	1 $\frac{1}{2}$	1	4	104	62	198	34	11 $\frac{1}{2}$	
Corbitt D-1 $\frac{1}{2}$.	3	1	1	1	H	11	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	46	18	2	1	18	2	1	4	110	72	206	34	10 $\frac{1}{2}$		
Corbitt C-2.	3	1	1	1	H	13	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	46	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	132	78	230	35	10 $\frac{1}{2}$	
Corbitt B-2 $\frac{1}{2}$.	3	1	1	1	H	14	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	46	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	136	78	232	35	10 $\frac{1}{2}$	
Corbitt R-2 $\frac{1}{2}$ -3.	3	1	1	1	H	14	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	46	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	22 $\frac{1}{2}$	2 $\frac{1}{2}$	1	4	153	92	254	35	10 $\frac{1}{2}$	
Corbitt A-3 $\frac{1}{2}$ -4.	3	1	1	1	H	14	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	46	21	3	1	21	3	1	2	168	106	266	35	9		
Corbitt AA-5.	3	1	1	1	H	13	2	14	2	36	68 $\frac{1}{2}$	3	1	2	68 $\frac{1}{2}$	3	1	2	168	106	268	38	10	
Day-Elder AN-1 $\frac{1}{2}$.	3	1	1	1	V	6 $\frac{1}{2}$	1 $\frac{1}{2}$	7	1 $\frac{1}{2}$	34 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1	4	10 $\frac{1}{2}$	3	1	4	106 $\frac{1}{2}$	62 $\frac{1}{2}$	191	35	11 $\frac{1}{2}$	
Day-Elder BN-2.	3	1	1	1	V	4	1 $\frac{1}{2}$	12 $\frac{1}{2}$	1 $\frac{1}{2}$	41	14 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	11 $\frac{1}{2}$	3	1	4	120	78 $\frac{1}{2}$	204 $\frac{1}{2}$	34	11 $\frac{1}{2}$	
Day-Elder DN-2 $\frac{1}{2}$.	3	1	1	1	V	10 $\frac{1}{2}$	2	12	1 $\frac{1}{2}$	43	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1	4	132	72 $\frac{1}{2}$	222 $\frac{1}{2}$	34	11 $\frac{1}{2}$	
Day-Elder CN-3.	3	1	1	1	V	10 $\frac{1}{2}$	2	12	1 $\frac{1}{2}$	43	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1	4	123 $\frac{1}{2}$	77 $\frac{1}{2}$	216	35	11 $\frac{1}{2}$	
Day-Elder FN-4.	3	1	1	1	V	7 $\frac{1}{2}$	1 $\frac{1}{2}$	12 $\frac{1}{2}$	1 $\frac{1}{2}$	43	15 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	15 $\frac{1}{2}$	3	1	4	120 $\frac{1}{2}$	81 $\frac{1}{2}$	214 $\frac{1}{2}$	35	11 $\frac{1}{2}$	
Day-Elder EN-5-6.	1	1	1	1	V	12 $\frac{1}{2}$	2	...	1 $\frac{1}{2}$	38	17 $\frac{1}{2}$	4	1	4	17 $\frac{1}{2}$	4	1	4	154	94	253	37	11 $\frac{1}{2}$	
Diamond T-75- $\frac{1}{2}$ -1.	3	1	1	1	V	8	1 $\frac{1}{2}$	10 $\frac{1}{2}$	1 $\frac{1}{2}$	33 $\frac{1}{2}$	14 $\frac{1}{2}$	2 $\frac{1}{2}$	1	2	46 $\frac{1}{2}$	2 $\frac{1}{2}$	1	1	1	90	57 $\frac{1}{2}$	182 $\frac{1}{2}$	34	11 $\frac{1}{2}$
Diamond T-O3-1 $\frac{1}{2}$.	3	1	1	1	V	9	1 $\frac{1}{2}$	6	1 $\frac{1}{2}$	35	48	2 $\frac{1}{2}$	1	2	33	2 $\frac{1}{2}$	1	1	2	100	...	...	34	11 $\frac{1}{2}$
Diamond T-T-1 $\frac{1}{2}$.	3	1	1	1	V	9	1 $\frac{1}{2}$	6	1 $\frac{1}{2}$	35	11 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	11 $\frac{1}{2}$	3	1	4	4	120	...	...	34	11 $\frac{1}{2}$
Diamond T-U2-2 $\frac{1}{2}$.	3	1	1	1	V	9	1 $\frac{1}{2}$	6	1 $\frac{1}{2}$	35	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1	4	4	120	...	...	34	11 $\frac{1}{2}$
Diamond TK-3 $\frac{1}{2}$.	3	1	1	1	V	10	1 $\frac{1}{2}$	10	1 $\frac{1}{2}$	35	15 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	15 $\frac{1}{2}$	3	1	4	4	142 $\frac{1}{2}$	96 $\frac{1}{2}$	233 $\frac{1}{2}$	34	9
Diamond T-S-5.	3	1	1	1	V	9	2	21	2	40 $\frac{1}{2}$	18	4	1	4	17 $\frac{1}{2}$	4	1	4	4	17 $\frac{1}{2}$	4	4	37	11 $\frac{1}{2}$
Dixon Model D.	4	1	1	1	V	11	1 $\frac{1}{2}$	8	1 $\frac{1}{2}$	41	13	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Dixon Model C.	4	1	1	1	V	11	1 $\frac{1}{2}$	9	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Dorris K-4-2 $\frac{1}{2}$.	3	1	1	1	V	2 $\frac{1}{2}$	10	1 $\frac{1}{2}$	42	7 $\frac{1}{2}$	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13 $\frac{1}{2}$	3	1	4	4	142 $\frac{1}{2}$	96 $\frac{1}{2}$	233 $\frac{1}{2}$	34	9
Dorris K-7-3 $\frac{1}{2}$.	3	1	1	1	V	2 $\frac{1}{2}$	10	1 $\frac{1}{2}$	42	8 $\frac{1}{2}$	15 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	15 $\frac{1}{2}$	3	1	4	4	178 $\frac{1}{2}$	130 $\frac{1}{2}$	270 $\frac{1}{2}$	36	9
Double Drive TT-3.	4	1	1	1	V	12	2	19	1 $\frac{1}{2}$	34	8 $\frac{1}{2}$	4	1	4	18	4	1	4	4	132	100	216	34	9 $\frac{1}{2}$
Duplex G.	4	1	1	1	V	11	1 $\frac{1}{2}$	8	1 $\frac{1}{2}$	41	13	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Duplex GH.	4	1	1	1	V	11	1 $\frac{1}{2}$	9	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Duplex A.	3	1	1	1	V	12	1	10	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Duplex AC.	3	1	1	1	V	12	1	10	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Duplex E.	3	1	1	1	V	12	1	10	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Duplex FD.	4	1	1	1	V	12	2	19	1 $\frac{1}{2}$	42	13 $\frac{1}{2}$	3 $\frac{1}{2}$	1	4	13	3	1	4	4	126	71	221 $\frac{1}{2}$	34 $\frac{1}{2}$	9 $\frac{1}{2}$
Eagle 100-2.	4	1	1	1	V	14	2	16	1 $\frac{1}{2}$	36	1 $\frac{1}{2}$	...	1	4	49 $\frac{1}{2}$	3	1	2	4	46	21	...	31	32
Eagle 101-1 $\frac{1}{2}$.	4	1	1	1	V	14	2	16	1 $\frac{1}{2}$	36	1 $\frac{1}{2}$	...	1	4	49 $\frac{1}{2}$	3	1	2	4	46	21	...	31	32
Eagle 104-2-3.																								

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE							BRAKE LINING						FRAME										
	Piston Rings	Carburetor		Upper Hose	Lower Hose	Fan Belt		Service			Emergency			Length		Width	Frame							
	No. per Cyl.	Width	Outlet Diameter	Inlet Diam.	Vertical or Horizontal	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Overall	Overall	Clearance at Lowest Point of Chassis	
Gramm-Bernstein 125-2½	3	1/8	1 1/4	1 1/2	V	4 1/2	1 1/2	12	1 1/2	F	8	5	1/8	2	45	2	1/8	4	126	77 1/4	214	32		
Gramm-Bernstein 30-3	3	1/8	1 1/4	1 1/2	V	11	1 1/2	9	1 1/2	F	22 1/2	2 1/2	1/8	2	22 1/2	2 1/2	1/8	4	129 1/2	81 1/4	226 1/2	36		
Gramm-Bernstein 75P-3½	3	1/8	1 1/4	1 1/2	V	11	1 1/2	9	1 1/2	F	22 1/2	2 1/2	1/8	2	22 1/2	2 1/2	1/8	4	129 1/2	81 1/4	226 1/2	36		
Gramm-Bernstein 40-4	3	1/8	1 1/4	1 1/2	V	23 1/2	2 1/2	9	1 1/2	F	28 1/2	2 1/2	1/8	4	28 1/2	2 1/2	1/8	4	144	87 1/4	240 1/2	36		
Gramm-Bernstein 50-5-6	3	1/8	1 1/4	1 1/2	V	12	2 1/2	14 1/2	2 1/2	F	32 1/2	2 1/2	1/8	4	32 1/2	2 1/2	1/8	4	132	97	263 1/2	36		
Grass Premier 40A	3	1/8	1	1 1/2	V	14	2 1/2	16	2 1/2	F	22 1/2	1 1/2	1/8	2	48	2 1/2	1/8	2	98	70	192	31		
Grass Premier 60A1 1/2	4	1/8	1 1/4	1 1/2	V	14	2 1/2	16	2 1/2	F	48 1/2	2	1/8	2	47	1 1/2	1/8	2	108	66	204	31		
Grass Premier 70A2 1/2	4	1/8	1 1/4	1 1/2	V	11	1 1/2	11	1 1/2	F	48	2 1/2	1/8	2	47	1 1/2	1/8	2	120	120	214	31		
Grass Premier 90A3 1/2	3	1/8	1 1/4	1 1/2	V	8	1 1/4	37	1 1/4	F	15 1/2	3 1/2	1/8	2	15 1/2	3 1/2	1/8	2	95	83	192	35		
G. W. W. Super	3	1/8	1 1/4	1 1/2	V	11	1 1/2	40	1 1/2	F	49	2 1/2	1/8	2	47	1 1/2	1/8	2	89	72	192	32	11 1/2	
Harvey WOA-2	4	1/8	1 1/4	2	V	11	2	14	1 1/4	F	45	2	1/8	2	45	2	1/8	2	139	87	242 1/4	32	10	
Harvey WFB-2 1/2	4	1/8	1 1/4	2	V	11	2	14	1 1/4	F	50	2 1/2	1/8	2	50	2 1/2	1/8	2	139	87	242 1/4	32	10	
Harvey WHB-3 1/2	4	1/8	1 1/4	2	V	12	2	14	1 1/4	F	20 1/2	4	1/8	2	20 1/2	4	1/8	2	151 1/2	85 1/2	258 1/2	35	9	
Harvey WFT-6	4	1/8	1 1/4	2	V	11	2	14	1 1/4	F	50	2 1/2	1/8	2	50	2 1/2	1/8	2	84	52	189 1/2	32	10	
Harvey WHT-10	4	1/8	1 1/4	2	V	12	2	14	1 1/4	F	20 1/2	4	1/8	2	20 1/2	4	1/8	2	86	52 1/2	191 1/2	35	9	
Hawkeye O	4	1/8	1	1 1/4	V	12	2	9	1 1/4	F	1 1/2	1/2	1/8	2	1 1/2	1/2	1/8	2	133	133	133	34		
Hawkeye K	4	1/8	1	1 1/4	V	12	2	9	1 1/4	F	1 1/2	1/2	1/8	2	1 1/2	1/2	1/8	2	133	133	133	34		
Hawkeye M	4	1/8	1	1 1/4	V	12	2 1/2	9	1 1/2	F	1 1/2	1/2	1/8	2	1 1/2	1/2	1/8	2	133	133	133	34		
Hawkeye N	4	1/8	1	1 1/4	V	14	2 1/2	12	1 1/2	F	1 1/2	1/2	1/8	2	1 1/2	1/2	1/8	2	133	133	133	34		
Indiana 15-1 1/2	3	1/8	1 1/4	—	—	17	1 1/4	14	1 1/4	F	19	2	1/8	4	19	2	1/8	4	114	67 1/2	213 1/4	34	10 1/2	
Indiana 20-2	3	1/8	1 1/4	—	—	6	1 1/4	13	1 1/4	F	22 1/2	2 1/2	1/8	4	22 1/2	2 1/2	1/8	4	126	74 1/2	226 1/2	33	10 1/2	
Indiana 25-2 1/2	3	1/8	1 1/4	—	—	6	1 1/4	13	1 1/4	F	22 1/2	2 1/2	1/8	4	22 1/2	2 1/2	1/8	4	126	74 1/2	226 1/2	33	9 1/2	
Indiana 35-3 1/2	3	1/8	1 1/4	—	—	10	1 1/4	17 1/2	1 1/2	F	20 1/2	3	1/8	4	20 1/2	3	1/8	4	139	79 1/2	244 1/4	34 1/2	8 1/2	
Indiana 51-5	3	1/8	1 1/4	—	—	7	1 1/4	13	1 1/4	F	65 1/2	3	1/8	4	65 1/2	3	1/8	4	152 1/2	87	260	37 1/2	10 1/2	
Inter'l S-2000 lbs.-Sp. Tr.	3	1/8	1 1/4	1 1/2	V	9 3/4	2 1/2	17 1/2	2 1/2	F	38	2	1/8	2	36	2	1/8	2	88	—	194 1/2	34	34	
International 33-3000 lbs.	4	1/8	1 1/4	1 1/2	V	6 1/2	2 1/2	6 1/2	2 1/2	F	43 1/2	2 1/2	1/8	2	43 1/2	2 1/2	1/8	2	101 1/2	57 1/2	202	32 1/2	11 1/2	
International 43-4000 lbs.	4	1/8	1 1/4	1 1/2	V	6 1/2	2 1/2	6 1/2	2 1/2	F	50	2 1/2	1/8	2	50	2 1/2	1/8	2	109	59 1/2	202	32 1/2	11 1/2	
International 63-6000	4	1/8	1 1/4	1 1/2	V	9	2 1/2	14 1/2	2 1/2	F	50 1/2	2 1/2	1/8	2	50 1/2	2 1/2	1/8	2	116 1/2	67 1/2	213 1/2	34	11 1/2	
International 103	4	1/8	1 1/4	1 1/2	V	9	2 1/2	6 1/2	3	F	51	1 1/2	1/8	2	—	—	—	2	146	87 1/2	244	34	12 1/2	
Kelly-Springfield K70-1 1/2-2	4	1/8	1 1/4	1 1/2	V	12 1/2	1 1/2	16	1 1/2	F	17 1/2	2 1/2	1/8	4	17 1/2	2 1/2	1/8	4	132	81	230	34	10	
Kelly-Springfield K41-3 1/2-5	4	1/8	1 1/4	1 1/2	V	6 1/2	2 1/2	24	1 1/2	F	3 1/2	4 1/2	1/8	2	58	2 1/2	1/8	2	144	87	248	36	9 1/2	
Kelly-Springfield K61-5 to 7	4	1/8	1 1/4	1 1/2	V	7	1 1/2	13	1 1/2	F	2 1/2	4 1/2	1/8	2	58	2 1/2	1/8	2	144	87	248	36	9 1/2	
Kelly-Springfield K-75-2 1/2	4	1/8	1 1/4	1 1/2	V	7	1 1/2	13	1 1/2	F	3 1/2	4 1/2	1/8	2	121 1/2	2 1/2	1/8	2	138	85	238	34	9 1/2	
Kelly-Springfield K-76-2 1/2	4	1/8	1 1/4	1 1/2	V	7	1 1/2	13	1 1/2	F	17 1/2	2 1/2	1/8	4	17 1/2	1 1/2	1/8	4	138	85	238	34	9 1/2	
Kenworth KS-2 1/2	4	1/8	1 1/4	1 1/2	H	12	2	14	1 1/2	F	2	...	20	2	2	...	2	133	133	133	34			
Kenworth L-3	4	1/8	1 1/4	1 1/2	H	12	2	14	1 1/2	F	2	...	46	2	2	...	2	114	—	32	—			
King Zeitzer 1	4	1/8	1	1 1/4	V	11	1 1/2	15 1/2	1 1/2	F	11	3	1/8	4	11	3	1/8	4	Opt	Opt	Opt	32	10 1/2	
King Zeitzer 1 1/2	4	1/8	1	1 1/4	V	11	1 1/2	15 1/2	1 1/2	F	12 1/2	3 1/2	1/8	4	12 1/2	3 1/2	1/8	4	Opt	Opt	Opt	32	10 1/2	
King Zeitzer 2 1/2	4	1/8	1	1 1/4	V	12	1 1/2	16	1 1/2	F	13 1/2	3 1/2	1/8	4	13 1/2	3 1/2	1/8	4	Opt	Opt	Opt	32	10 1/2	
King Zeitzer 3 1/2	4	1/8	1	1 1/4	V	12	1 1/2	16	1 1/2	F	16	3 1/2	1/8	4	16	3 1/2	1/8	4	Opt	Opt	Opt	36	10 1/2	
King Zeitzer 5	4	1/8	1	1 1/4	V	14	2	22	2	F	19 1/2	4	1/8	4	19 1/2	4	1/8	4	Opt	Opt	Opt	36	10 1/2	
Kiesel 1 Ton	3	1/8	1 1/4	—	—	12 1/2	1 1/2	10	1 1/2	F	11	3	1/8	4	12	3 1/2	1/8	4	102	58 1/2	201	34		
Kiesel Utility 1 1/2	3	1/8	1 1/4	—	—	12 1/2	1 1/2	10	1 1/2	F	19	2	1/8	4	12	3 1/2	1/8	4	120	70 1/2	219	34		
Kiesel Freightier 2	3	1/8	1 1/4	—	—	13 3/4	1 1/2	10	1 1/2	F	49	2	1/8	4	49	2	1/8	4	144	80	243	34		
Kiesel Heavy Duty 4	3	1/8	1 1/4	—	—	13 3/4	1 1/2	10	1 1/2	F	56	2 1/2	1/8	2	56	2 1/2	1/8	2	156	94 1/2	251 1/4	36		
Kleiber 1 1/2	4	1/8	1 1/4	—	—	V	11	1 1/2	13	1 1/2	F	45 1/2	1 1/2	1/8	2	45 1/2	1 1/2	1/8	2	114	—	34		
Kleiber 2 1/2	4	1/8	1 1/4	—	—	V	12	1 1/2	14	1 1/2	F	47 1/2	1 1/2	1/8	2	47 1/2	1 1/2	1/8	2	150	—	34		
Kleiber 3 1/2	4	1/8	1 1/4	—	—	V	13	1 1/2	14 1/2	1 1/2	F	47 1/2	1 1/2	1/8										

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE							BRAKE LINING					FRAME														
	No. per Cyl.	Piston Rings	Carburetor	Upper Hose		Lower Hose		Fan Belt		Service		Emergency		Length		Width	Length		Over All	Over All	Clearance at Lowest Point of Chassis						
				Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis		
Moreland EX-2	3	1/4	1/4	1 1/2	V	9	1 1/2	14	1 1/2	42	1 1/4	F	12	3 1/4	1/4	4	12	3 1/4	1/4	1/4	4	132	79 1/2	226 1/4	34	34	...
Moreland AX-3	3	1/4	1/4	1 1/2	V	9	1 1/2	13	1 1/2	42	1 1/4	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	1/4	4	174	101 1/2	253	34	34	...
Moreland RX-5	4	1/4	1/4	1 1/2	V	8	1 1/2	14 1/2	1 1/2	42	1 1/4	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	1/4	4	192	115 1/2	271	38	38	7
Moreland RC-Bus	3	1/4	1/4	1 1/2	H	9	1 1/2	11 1/2	1 1/2	24	1 1/2	F	49	2 1/2	1/4	4	46	2 1/2	1/4	1/4	4	156	100	256	34	34	8
Moreland EC-Bus	3	1/4	1/4	1 1/2	H	9	1 1/2	13	1 1/2	42	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	1/4	4	152	102	254	34	34	7
Moreland AC-Bus	3	1/4	1/4	1 1/2	H	9	1 1/2	13	1 1/2	42	1 1/2	F	15 1/2	3 3/4	1/4	4	15 1/2	3 3/4	1/4	1/4	4	171	114 1/2	271	44	44	7
Nash 2018-1-1 1/2	4	1/4	1/4	1 1/4	...	3	1 1/2	7 1/4	1 1/4	36	1	F	49 1/2	2	2	2	20 1/2	2 1/2	1/4	1/4	1	104 1/2	61	193	30 1/2	9 1/2	...
Nash 3018-2-2 1/2	4	1/4	1/4	1 1/4	...	3	1 1/2	7	1 1/2	44	1	F	50 1/2	3	2	2	20 1/2	2 1/2	1/4	1/4	1	118 1/2	65	207	31 1/2	9 1/2	...
Nash 4017-2-2 1/2	3	1/4	1/4	1 1/4	...	3	1 1/2	...	...	44	2	F	49 1/2	2 1/2	1/4	4	25 1/2	2 1/2	1/4	1/4	4	117 1/2	85 1/2	202 1/2	38 1/2	14 1/2	...
National M	4	1/4	1/4	1 1/4	V	16	2 1/2	15	2 1/2	40	1 1/2	F	12	3 1/4	1/4	4	12	3 1/4	1/4	1/4	4	116	65	208	34	34	9 1/2
National T	3	1/4	1/4	1 1/4	V	12	1 1/2	18	1 1/2	40	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	1/4	4	123 1/2	80 1/2	220	34	34	9 1/2
National NB-3 1/2	3	1/4	1/4	1 1/2	V	10	1 1/2	17	1 1/2	40	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	1/4	4	142	91	243	36	36	8 1/2
Nelson & LeMoon G-1	4	1/4	1/4	1 1/4	V	8	1 1/2	3 1/2	1 1/2	39 1/2	1 1/2	F	11 1/2	2 1/2	1/4	2	11 1/2	2 1/2	1/4	1/4	2	65	...	...	...	...	11
Nelson & LeMoon G-1 1/2	4	1/4	1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	12	3 1/4	1/4	2	12	3 1/4	1/4	1/4	2	65	...	...	...	...	11
Nelson & LeMoon G-2	4	1/4	1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	13 1/2	3 1/2	1/4	2	13 1/2	3 1/2	1/4	1/4	2	65	...	...	...	...	11
Nelson & LeMoon G-3	4	1/4	1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	13 1/2	3 1/2	1/4	2	13 1/2	3 1/2	1/4	1/4	2	65	...	...	...	...	11
Nelson & LeMoon G-4	4	1/4	1/4	1 1/4	V	9	1 1/2	3 1/2	1 1/2	41 1/4	1 1/4	F	16 1/2	3 3/4	1/4	2	16 1/2	3 3/4	1/4	1/4	2	Opt	...	...	...	...	11
Nelson & LeMoon G-5	4	1/4	1/4	1 1/2	V	12	2	40	1 1/2	40	1 1/2	F	18	4	2	18	4	2	18	4	2	Opt	...	...	...	...	11
Netco DK-2	3	1/4	1/4	1 1/4	V	12	1 1/2	16	1 1/2	40	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	1/4	4	142	94	234 1/2	34 1/2	34 1/2	9
Netco HL-2 1/2-3	3	1/4	1/4	1 1/4	V	13	1 1/2	16	1 1/2	41 1/4	1 1/2	F	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	1/4	4	100	58	191	34	34	9
Noble A-76-1 1/2	4	1/4	1/4	1 1/2	V	10	1 1/2	12 1/2	1 1/2	33 1/2	1 1/2	F	47	2 1/2	1/4	2	45	2 1/2	1/4	1/4	2	102	74	203	34	34	...
Noble A-21-1 1/2	4	1/4	1/4	1 1/2	V	10	1 1/2	12 1/2	1 1/2	33 1/2	1 1/2	F	19	2	2	19	2	2	19	2	2	126	80	221	34	34	...
Noble B-31-2	4	1/4	1/4	1 1/2	V	7	1 1/2	16 1/2	1 1/2	34 1/4	1 1/2	F	43	2	2	43	2	2	43	2	2	126	80	207	34	34	...
Noble D-52-3	4	1/4	1/4	1 1/4	V	9	2	12	1 1/2	34 1/4	1 1/2	F	21	2 1/4	1/4	4	21	2 1/4	1/4	1/4	4	101	207	218	36	36	...
Noble E-72-4	4	1/4	1/4	1 1/4	V	14 1/2	2	16	1 1/2	34 1/4	1 1/2	F	57	2 1/2	1/4	2	57	2 1/2	1/4	1/4	2	114	218	36	36	...	...
Northway B-2-2	3	1/4	1/4	1 1/4	V	5 1/2	2 1/2	13 7/8	1 1/2	46 23/32	1 1/2	F	50 1/2	2 1/2	1/4	2	50 1/2	2 1/2	1/4	1/4	2	133	62	223 1/2	33	9	9
Northway B-3-3 1/2	3	1/4	1/4	1 1/4	V	5 1/2	2 1/2	13 7/8	1 1/2	46 23/32	1 1/2	F	54	2 1/2	1/4	2	54	2 1/2	1/4	1/4	2	173	92	253 1/2	34 5/8	11	11
Ogden A-2-1	3	1/4	1/4	1	H	12	2	6	2	44	3/4	V	11	2 1/2	1/4	4	11	2 1/2	1/4	1/4	4	108	56	186	33 1/4	10 1/4	...
Ogden D-1 1/2	3	1/4	1/4	1	V	13	2	12	2	44	3/4	V	10 1/2	3	1/4	4	10 1/2	3	1/4	1/4	4	120	...	...	33 1/4	10 1/4	...
Ogden E-2 1/2	3	1/4	1/4	2	V	10	1 1/2	14	1 1/2	30	1 1/2	F	52	2 1/4	1/4	1	52	2 1/4	1/4	1/4	1	144	...	...	33 1/4	10 1/4	...
Ogden F-3 1/2	3	1/4	1/4	2	V	11	1 1/2	16	1 1/2	36	1 1/2	F	56	2 1/4	1/4	2	56	2 1/4	1/4	1/4	2	168	...	...	37	37	...
Ogden G-5	3	1/4	1/4	3	V	9	2	18	2	40	2	F	11	6	1/4	2	25	4	1/4	1/4	4	168	...	...	37	37	...
Oneida B9-2	3	1/4	1/4	1 1/2	H	9	1 1/2	9 1/2	1 1/4	38 1/2	2	F	48	2 1/2	1/4	2	34	2 1/2	1/4	1/4	2	114	...	...	34	34	...
Oneida C9-2 1/2	3	1/4	1/4	1 1/2	H	7	1 1/2	9 1/2	1 1/2	40	2	F	58	2 1/2	1/4	2	43	2 1/2	1/4	1/4	2	138	...	...	34	34	...
Oneida D9-3 1/2	3	1/4	1/4	1 1/2	H	7	1 1/2	9 1/2	1 1/2	40	2	F	16	3 1/4	1/4	4	16	3 1/4	1/4	1/4	4	155 1/2	...	...	36	36	...
Oneida E9-5	3	1/4	1/4	1 1/2	H	7	1 1/2	9 1/2	1 1/2	40	2	F	18	4	1/4	4	18	4	1/4	1/4	4	177	...	...	38	38	...
Oshkosh AW-2	3	1/4	1/4	1 1/2	H	16	2	17	2	33 1/2	1 1/4	F	23 1/2	3 1/2	1/4	1	48	2 1/2	1/4	1/4	2	108	75 1/2	189	34	34	...
Oshkosh AAW-2	3	1/4	1/4	1 1/2	H	16	2	17	2	33 1/2	1 1/4	F	23 1/2	3 1/2	1/4	1	48	2 1/2	1/4	1/4	2	144	110 1/2	224	34	34	...
Oshkosh BO-2 1/2	4	1/4	1/4	1 1/2	V	9 1/2	1 1/2	12	1 1/2	36 23/32	2	F	23 1/2	4 1/2	1/4	1	48	2 1/2	1/4	1/4	2	125	85 1/2	211	34	34	...
Oshkosh BBO2 1/2	4	1/4	1/4	1 1/2	H	9 1/2	1 1/2	12	1 1/2	36 23/32	2	F	23 1/2	4 1/2	1/4	1	48	2 1/2	1/4	1/4	2	144	104 1/2	230	34	34	9 1/2
Overland 1/2	4	1/4	1/4	1 1/2	H	8	2	9	2	39	14	F	40 1/2	1 1/4	1/4	1	40 1/2	1 1/4	1/4	1/4	1	93	56	184	33 1/4	11 1/2	...
Patriot 7R-1	3	1/4	1/4	3/4	V	8	2	9	2	39																	

Replacement Table—Continued

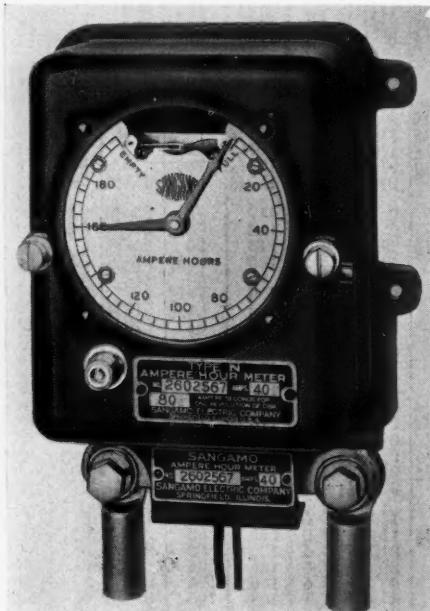
NAME, MODEL AND TONNAGE	ENGINE						BRAKE LINING						FRAME					
	No. per Cyl.	Piston Rings	Carburetor	Upper Hose	Lower Hose	Fan Belt	Service			Emergency			Length		Width			
							Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Type	Length	Width	Thickness	No. of Pieces	
Selden 52.	4	1 1/4	1 1/4	1 1/4	V	8 3/8	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	2	F	15 5/8	3 3/4	1/4	4	240
Selden 53B.	4	1 1/4	1 1/4	1 1/4	V	11 1/2	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	2	F	13	3 3/4	1/4	4	136
Selden 70B.	4	1 1/4	1 1/4	1 1/4	V	8 3/8	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	2	F	15 5/8	3 3/4	1/4	4	155
Selden 73B.	4	1 1/4	1 1/4	1 1/4	V	9	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	2	F	15 5/8	3 3/4	1/4	4	155
Selden 90B.	4	1 1/4	1 1/2	1 1/2	V	7	1 1/4	1 1/2	1 1/2	1 1/2	40 3/8	2	F	17 1/4	4	1/4	4	153
Service 25-1 1/4.	3	1 1/4	1	1 1/4	V	12 1/2	1 1/4	1 1/4	1 1/4	1 1/4	32 3/8	1 1/2	F	20	1 1/4	1/4	4	106 1/4
Service 33-1 1/2.	4	1 1/4	1 1/4	1 1/4	V	8	1 1/4	1 1/4	1 1/4	1 1/4	38	1 1/2	V	11	1 1/4	1/4	4	121
Service 42-2.	4	1 1/4	1 1/4	1 1/4	V	10	2	1 1/2	1 1/2	1 1/2	38	1 1/2	V	11 1/4	3 1/4	1/4	4	117 1/4
Service 61-3.	4	1 1/4	1 1/4	1 1/4	V	10	2	1 1/2	1 1/2	1 1/2	38	1 1/2	V	13 1/2	3 1/2	1/4	4	127 1/4
Service 81-4.	4	1 1/4	1 1/4	1 1/4	V	10	2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	V	15 1/2	3 1/4	1/4	4	144
Service 103-6.	4	1 1/4	1 1/4	1 1/4	V	10	2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	V	18	4	1/4	4	144
Standard 75-1 1/4.	3	1 1/4	1	1 1/4	V	10 1/2	2 1/2	1 1/4	1 1/4	1 1/4	39 1/4	1 1/4	F	11 1/4	2 1/2	1/4	4	108
Standard 1 1/2-K-1 1/2.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	10 1/2	3	1/4	4	120
Standard 2 1/2-K-2 1/2-3.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	13 1/2	3 1/2	1/4	4	132
Standard 3 1/2-K-3 1/2-5.	3	1 1/4	1 1/4	1 1/4	V	8	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	15 1/2	3 1/4	1/4	4	144
Standard 5K-5-7.	3	1 1/4	1 1/4	1 1/4	V	8	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	17 1/4	4	1/4	4	144
Sterling 1 1/4.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	1 1/4	1 1/4	1 1/4	38	1 1/4	F	11 1/4	3 1/4	1/4	4	120
Sterling 2.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/4	1 1/4	1 1/4	1 1/4	38	1 1/4	F	13 1/2	3 1/2	1/4	4	120
Sterling 2 1/2.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	38	1 1/2	F	13 1/2	3 1/2	1/4	4	138
Sterling 3 1/2.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	15 1/2	3 3/4	1/4	4	144
Sterling 5-Worm.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	17 1/4	4	1/4	4	158
Sterling 5-Chain E.H.D.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	15 1/2	3 1/2	1/4	4	158
Sterling 5-Ch. E.L.D.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	15 1/2	3 1/2	1/4	4	158
Sterling 7 1/2.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	40 3/8	1 1/2	F	17 1/4	4	1/4	4	158
Stewart M15-1 1/4.	3	1 1/4	1	1 1/4	V	18 1/2	1 1/4	1 1/4	1 1/4	1 1/4	37 1/2	1 1/4	F	51 1/2	2 1/2	1/4	2	99 1/4
Stewart M9-1 1/2.	3	1 1/4	1	1 1/4	V	18 1/2	1 1/4	1 1/4	1 1/4	1 1/4	37 1/2	1 1/4	F	55 1/2	2 1/2	1/4	2	119 1/4
Stewart M7X.	3	1 1/4	1	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	42 1/2	1 1/2	F	60	3	1/4	2	132 1/2
Stewart M10X.	3	1 1/4	1 1/4	1 1/4	V	6	1 1/2	1 1/2	1 1/2	1 1/2	42	1 1/2	F	55 1/2	2 1/2	1/4	2	138
Super Truck 50.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	42	1 1/2	F	68	3	1/4	2	135
Super Truck 70.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	42	1 1/2	F	51 1/2	3	1/4	2	144
Super Truck 100.	3	1 1/4	1 1/4	1 1/4	V	10	1 1/2	1 1/2	1 1/2	1 1/2	42	1 1/2	F	51 1/2	3	1/4	2	144
Traffic C-4000.	3	1 1/4	1	1 1/4	H	10 1/2	2	10 1/2	2	10 1/2	41 1/4	1 1/4	F	43 1/2	2 1/2	1/4	2	120 1/2
Traffic 6000.	3	1 1/4	1	1 1/4	H	10 1/2	2	10 1/2	2	10 1/2	41 1/4	1 1/4	F	52	3	1/4	2	120 1/2
Traffic Speedboy.	3	1 1/4	1	1 1/4	H	10 1/2	2	10 1/2	2	10 1/2	41 1/4	1 1/4	F	43 1/2	2 1/2	1/4	2	86
Transport 15-1.	3	1 1/4	1	1 1/4	H	10 1/2	2	10 1/2	2	10 1/2	40 3/8	1 1/4	F	48	2	1/4	2	98 1/2
Transport 26-1 1/2.	4	1 1/4	1	1 1/4	V	9 1/2	2	13	1 1/2	1 1/2	34 1/2	2	F	48 1/2	2	1/4	2	188
Transport 36-2.	4	1 1/4	1 1/4	1 1/4	V	10	2	13	1 1/2	1 1/2	33 1/2	2	F	48 1/2	2	1/4	2	201
Transport 61-3 1/2.	4	1 1/4	1 1/4	1 1/4	V	9 1/2	2	16	1 1/2	1 1/2	33 1/2	2	F	48 1/2	2	1/4	2	120 1/2
Transport 75-5.	4	1 1/4	1 1/4	1 1/4	V	12	2	16	1 1/2	1 1/2	35 1/2	2	F	11 1/2	3	1/4	2	127 1/2
Traylor B.	4	1 1/4	1 1/4	1 1/4	V	10	2	6	1 1/4	1 1/4	38	1 1/4	F	50	2	1/4	2	117
Traylor C.	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	1 1/4	36	2	F	50	2	1/4	2	122
Traylor D.	4	1 1/4	1 1/4	1 1/4	V	12	2	12	1 1/4	1 1/4	36	2	F	56 1/2	2 1/2	1/4	2	142
Traylor F.	4	1 1/4	1 1/4	1 1/4	V	14	2	14	1 1/4	1 1/4	37	2	F	59	2	1/4	2	165
Triangle AA-1.	3	1 1/4	1	1 1/4	H	17	2	34	1	1	29 1/2	1 1/4	F	72 1/2	4	1/4	2	94
Triangle A-2.	3	1 1/4	1	1 1/4	V	14	2	34	1	1	29 1/2	1 1/4	F	72 1/2	4	1/4	2	177 1/2
Triangle B-3.	3	1 1/4	1	1 1/4	V	9	1 1/2	1 1/2	1 1/2	1 1/2	39 1/2	1 1/2	F	72 1/2	4	1/4	2	126
Triangle C-2 1/2.	3	1 1/4	1	1 1/4	V	14	1 1/2	1 1/2	1 1/2	1 1/2	39 1/2	1 1/2	F	72 1/2	4	1/4	2	77 1/2
Union FW-2 1/2.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	1 1/4	37 1/2	2	F	27	4 1/2	1/4	1	133 1/2
Union H-4.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	1 1/4	37 1/2	2	F	56 1/2	3 1/2	1/4	1	157 1/2
Union HW-4.	3	1 1/4	1 1/4	1 1/4	V	20	1 1/4	19 1/2	1 1/4	1 1/4	37 1/2	2	F	27	4 1/2	1/4	1	98
United 25.	3	1 1/4	1 1/4	1 1/4	V	10	2	2	13 1/2	2	32 1/2	1 1/4	F	48	2	1/4	2	241 1/2
United 30.	3	1 1/4	1 1/4	1 1/4	V	10	2	2	13 1/2	2	32 1/2	1 1/4	F	48	2	1/4	2	235 1/2
United 35.	3	1 1/4	1 1/4	1 1/4	V	10	2	2	13 1/2	2	32 1/2	1 1/4	F	48	2	1/4	2	223 1/2
United 50.	3	1 1/4	1 1/4	1 1/4	V	10	2	2	13 1/2	2	32 1/2	1 1/4	F	48	2	1/4	2	201 1/2
United 60.	3	1 1/4	1 1/4	1 1/4	V	10	2	2	13 1/2	2	32 1/2	1 1/4	F	48	2	1/4	2	195 1/2
United 80.	4	1 1/4	1 1/4	1 1/4	V	8 1/2	2	13 1/2	1 1/2	42	2	F	60	3	1/4	2	141 1/2	
U.S.U.-1 1/4.	4	1 1/4	1	1 1/4	V	11 1/2	1 1/4	11 1/2	1 1/4	1 1/4	33	1 1/4	F	50 1/2	2 1/2	1/4	2	108
U.S.N.-1 1/2.	4	1 1/4	1	1 1/4	V	10 1/2	1 1/4</											

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE									BRAKE LINING						FRAME								
	Piston Rings	Carburetor			Upper Hose	Lower Hose	Fan Belt			Service			Emergency			Length		Width	Length		Width			
		No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	
Wilcox AA-1.	3	1 $\frac{1}{4}$	1 $\frac{1}{4}$	...	...	...	...	...	...	...	...	47 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	33 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	96	...	...	34
Wilcox B-1 $\frac{1}{2}$.	3	2 $\frac{1}{4}$	1 $\frac{1}{4}$	...	...	...	...	...	...	...	...	47 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	33 $\frac{1}{4}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	132	...	...	33
Wilcox C-2 $\frac{1}{2}$.	3	3 $\frac{1}{4}$	1 $\frac{1}{4}$	...	...	...	...	...	...	...	...	57 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	42 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	141	...	...	33
Wilcox E-3 $\frac{1}{2}$.	3	3 $\frac{1}{4}$	1 $\frac{1}{4}$	...	...	...	...	...	...	...	...	57 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	42 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	156	...	...	33
Wilcox F-5.	3	3 $\frac{1}{4}$	1 $\frac{1}{4}$	...	...	...	...	...	...	...	...	69 $\frac{1}{8}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	2	52	3 $\frac{1}{2}$	1 $\frac{1}{4}$	2	148 $\frac{1}{2}$	...	...	36
Witt-Will P-2	3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	V	8	1 $\frac{1}{2}$	12	1 $\frac{1}{4}$	31	1 $\frac{1}{4}$	F	48	3 $\frac{1}{4}$	1 $\frac{1}{4}$	4	48	3 $\frac{1}{4}$	1 $\frac{1}{4}$	4	78	223	32	10	
Witt-Will SS-3.	3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	V	8	1 $\frac{1}{2}$	12	1 $\frac{1}{4}$	41	1 $\frac{1}{2}$	F	52	3 $\frac{1}{2}$	1 $\frac{1}{4}$	4	52	3 $\frac{1}{2}$	1 $\frac{1}{4}$	4	156	108	242	10	
Witt-Will N-1 $\frac{1}{2}$.	3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	V	8	1 $\frac{1}{2}$	12	1 $\frac{1}{4}$	31	1 $\frac{1}{4}$	F	48	3 $\frac{1}{4}$	1 $\frac{1}{4}$	4	48	3 $\frac{1}{4}$	1 $\frac{1}{4}$	4	137	78	226	10	
Witt-Will S-2 $\frac{1}{2}$.	3	1 $\frac{1}{2}$	1 $\frac{1}{2}$	V	8	1 $\frac{1}{2}$	12	1 $\frac{1}{4}$	41	1 $\frac{1}{2}$	F	52	3 $\frac{1}{2}$	1 $\frac{1}{4}$	4	52	3 $\frac{1}{2}$	1 $\frac{1}{4}$	4	137	78	226	10	
Yellow Cab M22.	3	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$	V	8 $\frac{1}{4}$	2	10 $\frac{1}{4}$	2	38 $\frac{1}{2}$	$\frac{5}{8}$	V	49	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	45	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	60	43
Yellow Cab M42-1 $\frac{1}{2}$.	3	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$	V	8 $\frac{1}{4}$	2	10 $\frac{1}{8}$	2	38 $\frac{1}{2}$	$\frac{5}{8}$	V	21 $\frac{1}{8}$	3	1 $\frac{1}{4}$	4	11	3	1 $\frac{1}{4}$	2	92	32
Yellow Cab Express T1.	3	1 $\frac{1}{2}$	1	1 $\frac{1}{2}$	V	9 $\frac{1}{2}$	2	9 $\frac{1}{2}$	2	39 $\frac{1}{4}$	$\frac{5}{8}$	V	21 $\frac{1}{8}$	3 $\frac{1}{2}$	1 $\frac{1}{4}$	4	11 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{1}{4}$	2	94 $\frac{1}{2}$	61 $\frac{1}{4}$	181 $\frac{1}{2}$	34 $\frac{1}{2}$

Sangamo Type NT Amperehour Meter

The Sangamo Type NT meter, for electric truck service, recently marketed by the Sangamo Electric Co., Springfield, Ill., indicates the amount of battery discharge that has taken place. By comparative reading the operator can always tell what remaining capacity is available



Sangamo Automatic Meter

before the battery should be put on charge.

When the vehicle is placed on charge the Sangamo Ampere-hour Meter automatically gives the battery the proper overcharge and opens the charging circuit at the proper time, thus eliminating the need for attendance.

The Sangamo Type NT Meter is also adapted to the control of batteries requiring two-rate charging, for which purpose contacts at the gassing and full points are usually supplied.

Dunlop Special Traction Solid

Dunlop Tire & Rubber Company, in a recent announcement, stated that the latest addition to its solid tire line is the



Dunlop's New Special Traction Solid Tire

Dunlop Special Traction Solid, which is being offered to the trade in four different sizes. It was specially designed to service dump-load trucks, particularly those that are frequently operated in mud, sand and clay. The design is claimed to considerably lessen the possibility of the development of heel and toe action, or cupping.

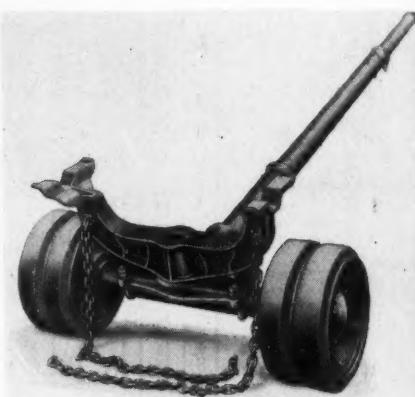
The construction of the tread is such as to permit soft substances being released while the tire obtains a firm grip on the road. The grooves extend over the rounded shoulders of the tire, which is further claimed to give it added ability to withstand severe strain.

Calculations, made by the U. S. Bureau of Public Roads, show that the average motor vehicle in use in the United States consumes 1.4 gallons of gasoline per vehicle per day. The Bureau figures that the average motor vehicle gets fourteen miles per gallon of gasoline. Accepting this figure as an average and multiplying it by 15,552,007—the number of vehicles registered on July 1 last—the Bureau arrives at the conclusion that the total daily mileage made by motor vehicles in use in the United States amounts to approximately 300,000,000. In two days the motor vehicles of the United States travel a greater mileage than do all of the passenger trains in an entire year, the Bureau estimates.

In its calculations the Bureau finds that the approximate gasoline consumption is around 800,000,000 gallons per month—last month it was 794,030,852. Of this total, 85 per cent is used in motor vehicles.

Weaver Truck Ambulance

The Weaver Co., Springfield, Ill., is in production with a new truck ambulance. The ambulance was designed to answer the demand for a quick, safe and easy means of towing in disabled trucks and buses.



Ambulance for Trucks and Buses

Strength and simplicity in design are two outstanding features of this equipment. Load is supported by a 2 $\frac{1}{2}$ -in. dead axle, which is securely fastened to the frame by two U bolts. Each wheel is supported on the axle by two sets of heavy S. K. F. ball bearings. Noise and vibration has been considerably reduced by heavy, solid-rubber, dual tires. The wheels are 8 $\frac{1}{2}$ in. wide, 16 in. diam. and the over-all width of the ambulance is 43 $\frac{1}{4}$ in. The load is guided by a heavy, one-piece, cast-steel yoke, which can be placed either in front of the ambulance axle or to the rear of it as the case may require. The pole is made in two sections, one telescoping within the other. The length is from 7 ft. to 13 ft. Shipping weight, 580 lbs.

Pyrene Truck Tire Chains

Announcement is made by the Pyrene Mfg. Co. of the addition of a complete line of truck tire chains to supplement the Off'n'on passenger car chains manufactured by them. The new chains are known as the Pyrene Truck Chains. They are made in all sizes.

Manufacturers and Models Included in the Specification Tables

List Includes Manufacturers of Buses and Electric Trucks

Trade Name	Capacity	Name	Address	How Manufacturer Sells				
				Nation-ally	Locally	Branches	Distribu-tors	Dealers
Ace	2½-Bus 1, 1½, 2, 2½, 3, 4, 5, 6½-Bus	American Motor Truck Co. Acme Motor Truck Co.	Newark, Ohio Cadillac, Mich.	Yes	Yes No	No	Yes	Yes
Acorn	2½, 4	Acorn Motor Truck Co.	Chicago, Ill.	No	Yes	No	No	No
American-La France	2½, 3½, 5, 6, 7-T.T.	American-La France Fire Engine Co.	Elmira, N. Y.	Yes	.....	Yes	No	Yes
Armleder	1½, 2½, 3½ T.T.	O. Armleder Motor Truck Co.	Cincinnati, Ohio	Yes	.....	1-N. Y. State only	.....	.....
Atterbury	1½, 2½, 3½, 5 1, 1½, 2½, 2, 2½, 3, 4, 5, 6-T.T.	Atterbury Motor Car Co. Autocar Co.	Buffalo, N. Y. Ardmore, Pa.	Yes Yes	No	No Yes	Yes	Yes
Available	1½, 2, 2½, 3½, 5	Available Truck Co.	Chicago, Ill.	No	Yes	No	.....	.....
Bessemer	1, 1½, 2½, 4	Bessemer Motor Truck Co.	Plainfield, N. J.	.....	.....	.....	.....	.....
Bethlehem	1, 2, 2½, 3½	Bethlehem Motors Corp.	Allentown, Pa.	.....	.....	.....	.....	.....
Betz	1, 2½	Betz Motor Truck Co.	Hammond, Ind.	No	Yes	.....	No	No
Bridgeport	1½, 2½, 4-Bus	Bridgeport Motor Truck Corp.	Stratford, Conn.	Yes	Yes	Yes	Yes	Yes
Brinton	1½, 2½	Brinton Motor Truck Co.	Philadelphia, Pa.	.....	.....	.....	.....	.....
Brockway	1, 1½, 2, 2½, 3, 3½, 4, 5-Bus	Brockway Motor Truck Corp.	Cortland, N. Y.	Yes	.....	Yes	Yes	Yes
C. T. Elec.	½, ¾, 1, 2, 3, 3½, 5	Commercial Truck Co.	Philadelphia, Pa.	Yes	No	Yes	Yes	Yes
Casco	1	Casco Motors, Inc.	Sanford, Me.	.....	.....	.....	.....	.....
Chevrolet	½, 1	Chevrolet Motor Co.	Detroit, Mich.	.....	.....	.....	.....	.....
Clinton	1¼, 2, 3, 4, 5 to -Bus	Clinton Motors Corp.	Reading, Pa.	.....	.....	.....	.....	.....
Clydesdale	1¼, 2½, 3½, 5, 7	Clydesdale Motor Truck Co.	Clyde, Ohio.	Yes	No	No	Yes	Yes
Columbia	1½, 2½, 3	Columbia Motor Truck Co.	Pontiac, Mich.	.....	.....	.....	.....	.....
Commerce	1, 1½, 2, 2½-Bus	Commerce Motor Truck Co.	Ypsilanti, Mich.	Yes	No	No	Yes	Yes
Concord	1, 1½, 2, 2½, 3	Abbott-Downing Truck & Body Company	Concord, N. H.	.....	.....	.....	.....	.....
Corbitt	1, 1½, 2, 2½, 3, 4, 5	Corbitt Motor Truck Co.	Henderson, N. C.	Yes	.....	.....	Yes	Yes
Day-Elder	1½, 2, 2½, 3, 4, 5, 6-Bus	Day-Elder Motors Corp.	Newark, N. J.	Yes	.....	.....	Yes	Yes
Diamond T	1, 1¼, 1½, 2½, 3½, 5	Diamond T Motor Car Co.	Chicago, Ill.	Yes	No	Yes	Yes	Yes
Dixon	1½, 2, 2½, 3½, 5	Dixon Motor Truck Co.	Altoona, Pa.	.....	Yes	.....	.....	.....
Dodge Brothers	¾, 1, 2½, 3½	Dodge Brothers, Inc.	Detroit, Mich.	.....	.....	.....	.....	.....
Dorris	1, 2½, 3½	Dorris Motor Car Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Double Drive	3	Double Drive Truck Co.	Benton Harbor, Mich.	.....	.....	.....	.....	.....
Duplex	1, 1½, 2, 2½, 3½-Bus	Duplex Truck Co.	Lansing, Mich.	Yes	.....	No	.....	Yes
Eagle	1¼, 2	Eagle Motor Truck Corp.	St. Louis, Mo.	.....	.....	.....	.....	.....
F. W. D.	3	Four-Wheel Drive Auto Co.	Clintonville, Wis.	Yes	.....	Yes	.....	Yes
Fageol	2, 3, 4, 6-Bus	Fageol Motors Co.	Oakland, Cal.	Yes	.....	.....	.....	.....
Federal	1, 1¼, 1½, 2, 2½, 4, 5-Bus, T. T.	Federal Motor Truck Co.	Detroit, Mich.	Yes	No	.....	.....	.....
Fifth Avenue	Bus	Fifth Avenue Coach Co.	New York City.	Yes	.....	Yes	.....	Yes
Ford	1	Ford Motor Co.	Highland Park, Mich.	Yes	No	No	Yes	Yes
Front Drive	1½	Double Drive Truck Co.	Benton Harbor, Mich.	.....	.....	.....	.....	.....
Fulton	1, 2	Fulton Motors Corp.	Farmingdale, N. Y.	.....	.....	.....	.....	.....
G. M. C.	1, 2½, 3½, 5-T. T.	General Motors Truck Co.	Pontiac, Mich.	Yes	No	Yes	Yes	Yes
G. W. W.	1½, 2	Wilson Truck Mfg. Co.	Henderson, Iowa	.....	.....	.....	.....	.....
Garford	1, 1½, 4, 5, 7½-Bus	Garford Motor Truck Co.	Lima, Ohio	.....	.....	.....	.....	.....
Gary	1, 2, 2½, 3, 3½, 5	Gary Motor Corp.	Gary, Ind.	.....	.....	.....	.....	.....
Gotfredson	1, 1½, 2, 3, 4, 5	Gotfredson Truck Corp.	Detroit, Mich. & Walkerville, Ont.	Yes	.....	Yes	Yes	.....
Graham	1, 1½-Bus	Graham Brothers	Detroit, Mich.	.....	.....	.....	.....	.....
Gramm-Bernstein	1, 1¼, 1½, 2, 2½, 3, 3½, 4, 5, 6	Gramm-Bernstein Motor Truck Co.	Lima, Ohio	.....	.....	.....	.....	.....
Grass Premier	1, 1½, 2, 2½, 3½	Grass Premier Truck Co.	Sauk City, Wis.	No	Yes	No	No	No
Guilder	1, 1½, 2, 3, 4, 5, 6-Bus	Guilder Engineering Co.	Poughkeepsie, N. Y.	.....	.....	.....	.....	.....
Hahn	1¼, 1½, 2, 2½, 3, 5	Hahn Motor Truck Co.	Hamburg, Pa.	Yes	Yes	.....	.....	.....
Harvey	2½, 3½, 7, 10-T.T.	Harvey Motor Truck Co.	Harvey, Ill.	No	Yes	Yes	No	No
Hawkeye	1½, 2½, 3½	Hawkeye Truck Co.	Sioux City, Iowa	.....	.....	.....	.....	.....
Hug	1½, 2, 2½	Hug Company	Highland, Ill.	Yes	.....	.....	Yes	.....
Independent	1, 1½, 2½	Independent Motor Truck Co., Inc.	Davenport, Ia.	.....	.....	.....	.....	.....
Indiana International	1, 1½, 2, 2½, 3½, 5 1, 1½, 2, 3, 5-Bus	Indiana Truck Corp. International Harvester Co. of America	Marion, Ind. Chicago, Ill.	Yes	Yes	Yes	Yes	Yes
Kankakee	2½	Kankakee Motor Truck Co.	Kankakee, Ill.	.....	.....	.....	.....	.....
Kelland (Elec.)	½, ¾, 1	Kelland Motor Car Co.	Newark, N. J.	No	Yes	No	No	No
Kelly-Springfield	1½, 2, 2½, 3½, 5-7	Kelly-Springfield Motor Truck Co.	Springfield, Ohio	Yes	Yes	Yes	Yes	Yes

Trade Name	Capacity	Name	Address	How Manufacturer Sells				
				Nation-ally	Locally	Branches	Distribu-tors	Dealers
Kenworth	1½, 3, 3½	Kenworth Motor Truck Corp.	Seattle, Wash.	No	Yes	No	.....	Yes
Kimball	2, 2½, 4, 5	Kimball Motors Corp.	Los Angeles, Cal.	.....	.....	.....	.....	.....
King Zeitler	1, 1½, 2½, 3½, 5	King Zeitler Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Kissel	1, 1½, 2½, 4-Bus	Kissel Motor Car Co.	Hartford, Wis.	Yes	.....	No	Yes	Yes
Kleiber	1½, 2½, 3½, 5	Kleiber Motor Truck Co.	San Francisco, Cal.	.....	.....	.....	.....	.....
Krebs	1½, 2½, 3½, 5	Krebs Motor Truck Co.	Bellevue, Ohio	Yes	No	No	Yes	Yes
Lange	1½, 2½, 3½	Lange Motor Truck Co.	Pittsburgh, Pa.	.....	.....	.....	.....	.....
Lansden (Elec.)	¾, 1, 2, 3½, 5, 6	Lansden Company	Danbury, Conn.	Yes	.....	1-N. Y. State only	Yes	Yes
Larrabee-Deyo	1½, 1½, 2½, 3½-Bus	Larrabee-Deyo Motor Truck Co., Inc.	Binghamton, N. Y.	.....	.....	.....	.....	.....
Luedinghaus	1, 1½, 2½, 3½, 5	Luedinghaus-Espenschied Wagon Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Macar	1½, 2, 3, 4, 5	Macar Truck Co.	Scranton, Pa.	No	Yes	4	Yes	Yes
Mack	1½, 2½, 3½, 5, 6½, 7½-Bus T. T.	International Motor Co.	New York, N. Y.	Yes	.....	86	.....	Yes
Mason Road King	1½-Bus	Mason Motor Truck Co.	Flint, Mich.	.....	.....	.....	.....	.....
Master	1½, 1½, 2½, 3½, 5, 5½-Bus	Master Motor Truck Mfg. Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Menominee	1, 1½, 1½, 2½, 3½, 5	Menominee Motor Truck Co.	Clintonville, Wis.	.....	.....	.....	.....	.....
Moreland	1, 1½, 2, 3, 5	Moreland Motor Truck Co.	Burbank, Cal.	.....	.....	.....	.....	.....
Nash	1, 2, 2½, 3	Nash Motors Co.	Kenosha, Wis.	Yes	.....	.....	.....	.....
National	2, 3, 3½, 4	National Steel Car Corp., Ltd.	Hamilton, Ont., Canada	Yes	No	2	Yes	Yes
Nelson-LeMoon	1, 1½, 2, 2½, 3½, 5	Nelson & Le Moon	Chicago, Ill.	.....	.....	.....	.....	.....
Netco	2½, 3, 4	New England Truck Co.	Fitchburg, Mass.	.....	.....	.....	.....	.....
Noble	1, 1½, 2, 2½, 3, 3½, 4	Noble Motor Truck Co.	Kendallville, Ind.	No	No	No	Yes	Yes
Northway	1½, 3, 5	Northway Motors Corp.	Natick, Mass.	.....	.....	.....	.....	.....
O. B. (Elec.)	2, 3½, 5	O. B. Electric Vehicles, Inc.	Long Island City N. Y.	.....	.....	.....	.....	.....
O. K.	1, 1½, 2, 2½, 3½	Nolan Truck Co.	Okay, Okla.	.....	.....	.....	.....	.....
Ogden	1, 1½, 2½, 3½, 5	Ogden Truck Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Oneida	2, 2½, 3½, 5	Oneida Manufacturing Co.	Green Bay, Wis.	.....	.....	.....	.....	.....
Oshkosh	2, 2½, 4	Oshkosh Motor Truck Mfg. Co.	Oshkosh, Wis.	.....	.....	.....	.....	.....
Overland	½	Willys-Overland Co.	Toledo, Ohio.	Yes	Yes	24	Yes	Yes
Patriot	1, 2, 3	Patriot Mfg. Co.	Havelock, Neb.	Yes	.....	.....	.....	.....
Penn	1, 2	Penn Motors Corp.	Philadelphia, Pa.	Yes	No	No	Yes	Yes
Pierce-Arrow	2, 3, 4, 5, 6, 7½, T. T.	Pierce-Arrow Motor Car Co.	Buffalo, N. Y.	Yes	No	.....	Yes	Yes
Pioneer	1	Pioneer Truck Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Power	1½, 2½, 3½	Power Truck & Tractor Co.	St. Louis, Mo.	.....	.....	.....	.....	.....
Rainier	¾, 1, 1½, 2, 2½, 3½, 5½, 5	Rainier Trucks, Inc.	Long Island City, N. Y.	No	Yes	No	Yes	Yes
Red Ball	3	Red Ball Transit Co.	Indianapolis, Ind.	.....	.....	.....	.....	.....
Reo	1½-Bus	Reo Motor Car Co.	Lansing, Mich.	.....	.....	.....	.....	.....
Republic	1½, 1½, 2, 3, 4½-Bus	Republic Motor Truck Co., Inc.	Alma, Mich.	Yes	No	No	Yes	Yes
Rowe	2½, 3, 4, 5	Rowe Motor Mfg. Co.	Lancaster, Pa.	.....	.....	.....	.....	.....
Ruggles	¾, 1½, 1½, 2, 2½, 3	Ruggles Motor Truck Co.	Saginaw, Mich.	.....	.....	.....	.....	.....
Rumely	1½	Advance Rumely Thresher Co.	Laporte, Ind.	Yes	No	30	Yes	Yes
Sandow	1, 1½, 2, 2½, 3½, 5	Sandow Motor Truck Co.	Chicago Heights, Ill.	Yes	No	.....	.....	.....
Sanford	1, 1½, 2½, 3½, 5	Sanford Motor Co.	Syracuse, N. Y.	Yes	.....	.....	Yes	.....
Saurer	½, T. T.	Adolph Saurer, Inc.	New York, N. Y.	.....	Yes	.....	Yes	Yes
Schacht	1½, 2, 2½, 3, 4, 5	G. A. Schacht Motor Truck Co.	Cincinnati, Ohio.	Yes	.....	Yes	Yes	Yes
Selden	1½, 1½, 2½, 3, 3½, 5	Selden Truck Corp.	Rochester, N. Y.	Yes	No	Yes	Yes	Yes
Service	1½, 1½, 2, 3, 4, 6	Service Motors, Inc.	Wabash, Ind.	.....	.....	Yes	Yes	Yes
Six Wheel Bus	1½, 1½, 2½, 3½, 5	The Six Wheel Co. of Phila.	Philadelphia, Pa.	Yes	.....	.....	Yes	Yes
Standard	1½, 1½, 2½, 3½, 5	Standard Motor Truck Co.	Detroit, Mich.	Yes	No	.....	Yes	Yes
Steinmetz (Elec.)	1, 2, 2½, 3½, 5	Steinmetz Electric Motor Car Corp.	Arlington, Baltimore, Md.	Yes	.....	.....	Yes	Yes
Sterling	1½, 2, 2½, 3½, 5, 7½-Bus	Sterling Motor Truck Co.	Milwaukee, Wis.	Yes	.....	Yes	Yes	Yes
Stewart	1, 1½, 2½-3, 3½-4	Stewart Motor Corp.	Buffalo, N. Y.	Yes	.....	Yes	Yes	Yes
Stoughton	1½, 1½, 2, 3, 2½-4	Stoughton Wagon Co.	Stoughton, Wis.	.....	.....	.....	.....	.....
Super Truck	2½, 3½, 5	O'Connell Motor Truck Co.	Waukegan, Ill.	.....	Yes	No	.....	No
Traffic	1½, 2, 3	Traffic Motor Truck Corp.	St. Louis, Mo.	.....	.....	.....	.....	.....
Transport	1, 1½, 2, 3½, 5	Transport Truck Co.	Mt. Pleasant, Mich.	.....	.....	.....	.....	.....
Traylor	1½, 2, 3, 5	Traylor Eng. & Mfg. Co.	Allentown, Pa.	.....	.....	.....	.....	.....
Triangle	1, 1½, 2, 2½	Triangle Motor Truck Co.	St. Johns, Mich.	.....	.....	.....	.....	.....
Twin City	2½, 3, 3½	Minneapolis Steel & Machinery Co.	Minneapolis, Minn.	Yes	No	Yes	Yes	Yes
U. S.	1½, 1½, 2½, 3, 4, 5-7	United States Motor Truck Co.	Cincinnati, Ohio	.....	.....	.....	.....	.....
Union	1½, 2½, 4, 6-Bus	Union Motor Truck Co.	Bay City, Mich.	Yes	Yes	Yes	Yes	Yes
United	1, 1½, 2, 2½, 3, 3½	United Motor Products Co.	Grand Rapids, Mich.	.....	Yes	Yes	Yes	Yes
Wachusett	1, 1½, 2, 2½	Wachusett Motors, Inc.	Fitchburg, Mass.	.....	Yes	.....	.....	.....
Walker (Elec.)	½, ¾, 1, 2, 3½, 5	Walker Vehicle Co.	Chicago, Ill.	.....	.....	.....	.....	.....
Walker Johnson	½, 2½, 3	Walker Johnson Truck Co.	Woburn, Mass.	.....	.....	.....	.....	.....
Walter (Elec.)	T. T.	Walter Motor Truck Co.	Long Island City, N. Y.	Yes	Yes	.....	Yes	.....
Ward (Elec.)	750 lbs. to 7 ton	Ward Motor Vehicle Co.	Mt. Vernon, N. Y.	Yes	.....	Yes	Yes	Yes
Ward La France	2½, 3½, 5, 7-Bus	Ward La France Truck Corp.	Elmira, N. Y.	Yes	No	Yes	Yes	Yes
White	¾, 2, 3½, 5-Bus	White Co.	Cleveland, Ohio	.....	.....	.....	.....	.....
Wilcox	1, 1½, 2½, 3½, 5	Wilcox Trux, Inc.	Minneapolis, Minn.	.....	.....	.....	.....	.....
Winther	1½, 2½, 3, 3½, 5	Winther Motor Co.	Kenosha, Wis.	.....	.....	.....	.....	.....
Witt Will	1½, 2, 2½, 3, 4, 5	Witt Will Co., Inc.	Washington, D. C.	No	Yes	No	No	No
Yellow Cab	¾, 1-Bus	Yellow Cab Mfg. Co.	Chicago, Ill.	.....	.....	.....	.....	.....

The Hersey Cushion Shackle

The Hersey Cushion Shackle, manufactured and distributed by the Gruss Minnesota Co., Minneapolis, Minn., is a shock absorber for rear end installations on commercial vehicles. It consists of three major elements, upper and lower elements and a replaceable cushion medium, which combine to form an unusual snubbing and shock absorbing principle. Installation is simple and can be effected by a mechanic in a few hours, as it only requires the removal of the rear shackle and shackle pin.

Upon analyzing the basic operating principle of the shackle it will be found that the 48-lb. weight of the unit acts as the snubbing agent while the rubber core acts as the shock absorber.

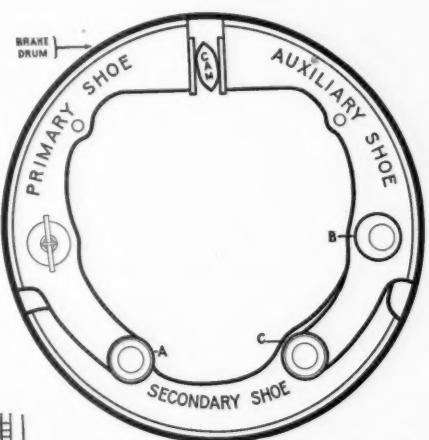
Referring to the accompanying illustration, when the wheel rises to an unevenness in the road the spring flattens out before the body commences to rise. This action lengthens the spring and throws point A forward, or to the rear of the vehicle, and the entire unit downward, the greatest travel in this movement being naturally at point C. The rubber core in the chamber or under the cover D absorbs the shock and vibrations. Sufficient space is allowed between the rubber and the walls to permit flowage of the rubber to the extent required as to permit about a two inch compression or closing up of the jaws D and B. The shackle bolts come almost together in this action.

The recoil is next accommodated. The natural recoil action of the spring and the

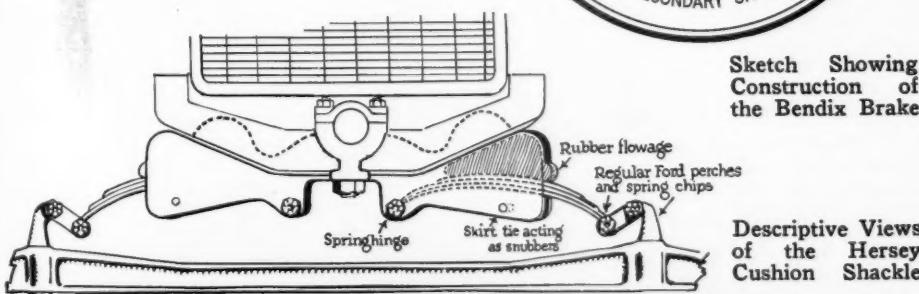
recoil of the rubber core is snubbed by the 48-lb weight of the shackle. When the truck spring starts to come back to its normal position point A is drawn back, but this action is checked or slowed up by the weight which must be lifted upward at the point C by the force of the recoil and the shortening of the spring.

The rubber core is triangular in shape, being thinnest almost at point C and widest at about midway between D and E where the rib is exposed on the upper jaw. The greatest rubber flowage is at the front end which end is also open from the rib to E permitting a larger flowage at the point where the thickest part of the rubber lays.

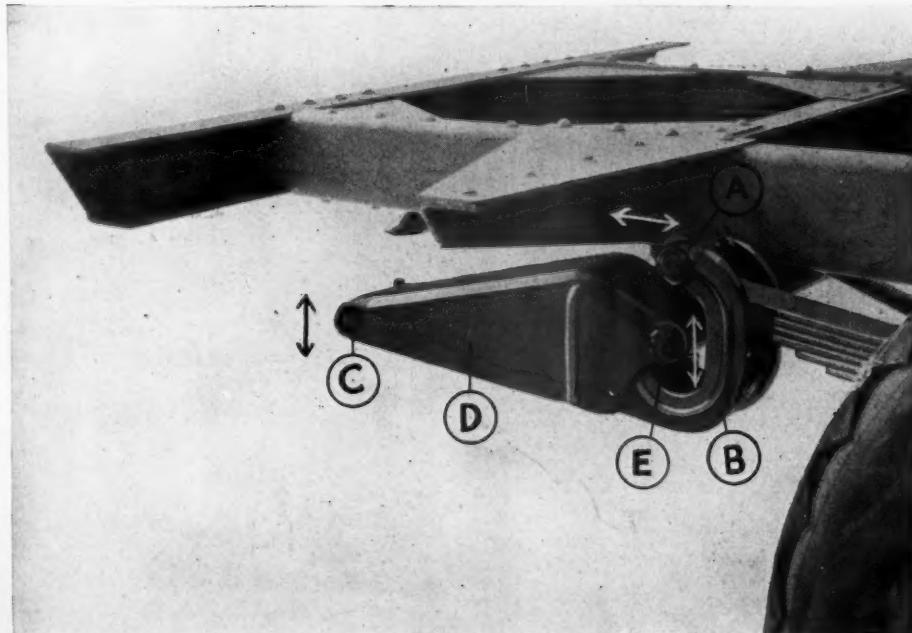
The price of the Hersey Cushion Shackle ranges from \$60 to \$125 for a complete set on trucks ranging in capacity from $\frac{3}{4}$ to 3 tons.



Sketch Showing Construction of the Bendix Brake



Descriptive Views of the Hersey Cushion Shackle



Bendix 4-Wheel Brake

The construction and servo action of the new Bendix 3 shoe self-energizing brake is interesting principally because of its simplicity and effective action. It will be manufactured in the factory of the Bendix Brake Co., South Bend, Ind., a subsidiary of the Bendix Corp.

The accompanying diagram illustrates the action. The primary shoe is a floating shoe anchored only to the secondary shoe at A. The secondary shoe is anchored to the backing plate at B. The auxiliary shoe is anchored to the backing plate at C. When pedal pressure is applied, the cam instantly actuates the primary shoe and through this primary shoe pressure is applied to the secondary shoe. Frictional force aids the primary shoe to force the secondary shoe against the drum, which is a decided servo action. This self-energizing feature is stated to multiply a gentle foot pressure into a powerful smooth braking action.

Another interesting feature of this brake is the large area of brake lining in contact with the brake drum. The Bendix brake gives 335 degrees of effective contact as against the 227 degrees of the conventional type of internal brake. Automatic equalization is another feature. A high spot on the lining of any one Bendix brake is stated to wear down until there is even pressure on four brakes.

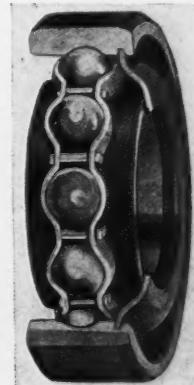
Lubricant Retained in New S. R. B. Pilot Bearing

Through the provision of a special retainer the new clutch pilot bearing now being marketed by Standard Steel and Bearings, Inc., Plainville, Conn., is designed to overcome the lubrication difficulty of the clutch bearing. Ordinarily this bearing, inaccessible and buried in the clutch, can not be properly reached for lubrication until the clutch is overhauled. The new bearing by reason of the retainer is stated to hold the initial supply of grease over a long period of time, keeping the bearing properly lubricated and free from dirt.

With the exception of the retainer this bearing is of conventional construction. The steel retainer is supported in a groove in the outer race just beyond the outer flange of the cage and is snapped into place.

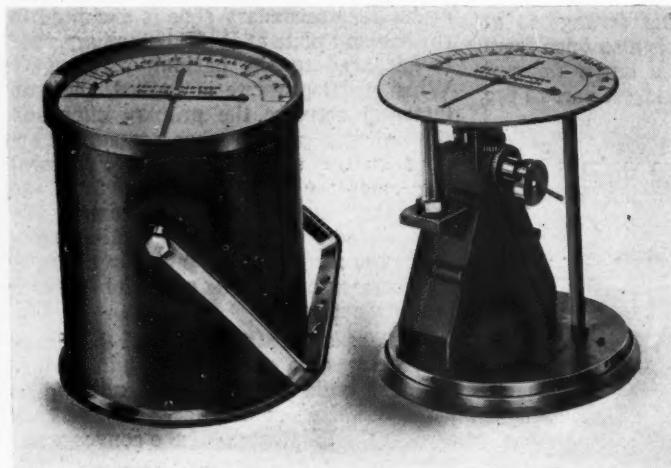
Formed to closely fit the inner race, a compartment is provided to hold a considerable amount of lubricant and exclude foreign matter.

S. R. B. Clutch Pilot Bearing Designed to Retain Lubrication.



James Brake Inspection Decelerometer

A convenient, rapid and accurate method of inspecting and determining the condition of brakes is provided by the James Brake Inspection Decelerometer. This new device, which can be picked up like a bucket and place into a vehicle under test, is almost uncanny in the accuracy of its recordings. It is designed particularly for



use in service stations, garages, automotive vehicle manufacturers, research engineers and police authorities. It is manufactured by the American Instrument Co., Washington, D. C.

This new device does away with all the old makeshift forms of brake inspection, which at best depended upon the accuracy of the driver; an element most objectionable. With the Decelerometer a test may be made at any reasonable speed on any stretch of road, without the use of road markings. The instrument reads the distance in feet in which the car will stop from a speed of 20 m.p.h. regardless of the actual speed, be it more or less. All results are thus reduced to the same basis, the test is a simple one to perform, and all results are comparable.

In making a test the instrument is placed on the floor of the vehicle, with the direction arrow pointing along the line

of the direction of the car motion. The vehicle is accelerated to any desired speed and the brakes are applied with as much force as possible. The pointer will indicate the stopping distance from 20 m.p.h. The faster the stop the greater the motion of the pointer, but the lower the reading.

The design of this instrument meets the approval of the Bureau of Standards, and the principle on which the instrument operates, is based upon the fundamental

laws of motion which are incontrovertible. All parts of the instrument are interchangeable, while the weight is about 10 lbs.

nor can water or foreign matter gain entrance. After initial installation and adjustment further attention is not required.

The working principle of the Duplex is simple. On the rebound of the vehicle (refer to the illustration), the arm, connected by a noiseless flexible strap to the axle, is pulled down. This pull, acting through the arm shaft and lever, forces the piston down and creates an oil pressure or resistance which is controlled by the two relief valves. It is in these two valves that the two adjustments are obtained, the automatic operation of which depends on road conditions. When the shocks are severe the light or upper valve is entirely shut off turning over the control of the oil pressure to the heavy adjustment valve at the bottom.

The price of model D is \$115 f. o. b. for a set of four with all attachments.

Lovejoy Duplex Hydraulic Shock Absorber

The Lovejoy Duplex hydraulic shock absorber of new design is suitable for truck, bus and passenger car use. The main difference between the Duplex model and the earlier model, according to the Lovejoy Manufacturing Co., Boston, Mass., is that two permanent adjustments are provided in the latest model. The light adjustment covers the range of normal city driving and automatically passes over control of the spring action to a heavier adjustment whenever severe road conditions are encountered.

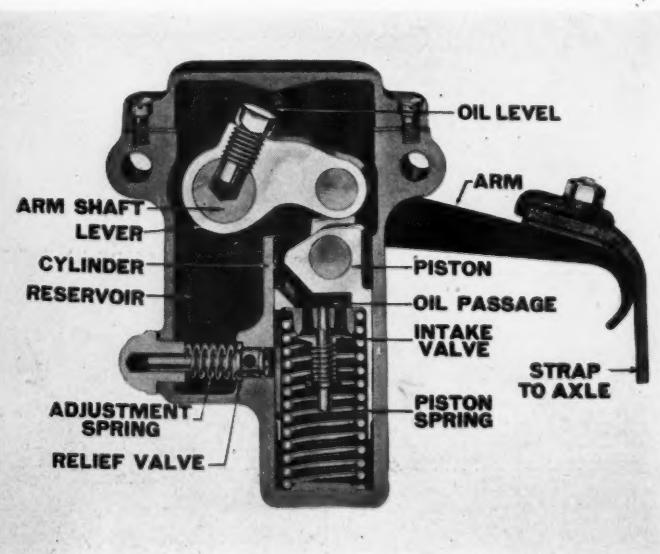
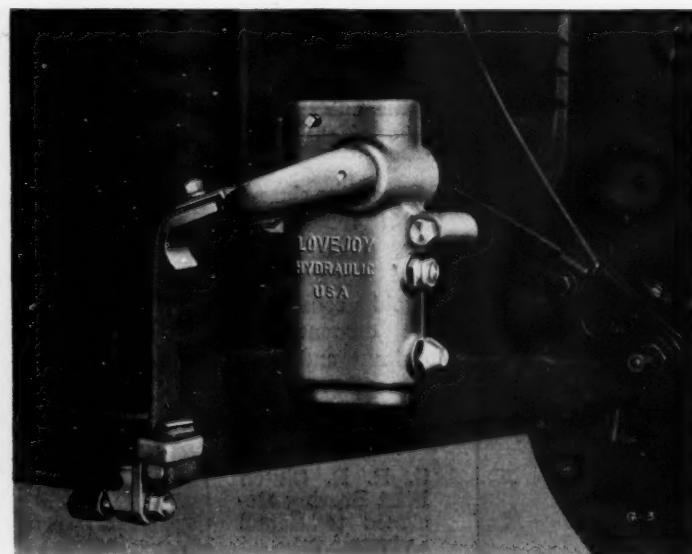
The device works on the hydraulic principle. The vehicle equipped with them rides on a flexible cushion of oil which absorbs the rebound. The hermetical construction is such that the oil in which the working parts are immersed cannot escape,

Koupet California Tops

By mounting a convertible Koupet California Top, manufactured by the Koupet Auto Top Co., Belleville, Co., and a commercial body on a Ford Roadster practically any light delivery requirement can be met. The Koupet top converts the Roadster into an ideal delivery unit for use throughout the year and protects the driver in inclement weather. Installation of the top can be accomplished in a few hours by any mechanic, as the regular Ford top support brackets are used.

One of the features of the top is the double ventilating windshield with automatic stop-action hinges. Another is the swinging door which is equipped with a handle for controlling the lock in the Ford door. Both doors are securely linked together. The upper door, however, can be detached for summer operation by removing the pins from the hinges.

The frame is made of wood screwed and glued together. The bow supported roof is covered with waterproof rubberized fabric. The sides of the roof are well padded for shape and are provided with troughs to prevent rain from dripping on windows. The windshield is built in, joining firmly with the roof and sides.



Assembled and Cutaway Views of the Lovejoy Hydraulic Shock Absorber

Rolled Steel Truck Wheels

NO truck wheel ever passed more severe tests than those to which the Bethlehem Rolled Steel Truck Wheel was recently subjected by the U. S. Bureau of Standards at Washington, D. C.

WE manufacture and carry in stock Bethlehem Rolled Steel Truck Wheels for 2, 2½, 3½, 5 and 7 ton trucks, made for Timken axles and using solid tires. These have the hubs of front and rear wheels equipped with Timken bearing cups. Rear wheels are assembled with Timken brake drums, and front wheels are furnished with hub caps. Wheels are shipped ready to receive tires and be installed on the truck.

Any other hub cores and brake drums can be made to truck makers' specification and assembled with the wheel when desired.

These tests conclusively proved the ability of the Bethlehem Rolled Steel Truck Wheel to stand up under far more severe punishment than any wheel is ever likely to receive in actual everyday use. They also demonstrated finally and beyond question the capability and stamina of the Bethlehem Rolled Steel Truck Wheel.

The conclusion arrived at by the U. S. Bureau of Standards was:

"The I-beam type of wheel was the strongest and most resilient metal wheel tested."

To insure satisfactory performance, specify Bethlehem Rolled Steel Truck Wheels on your next order.

Send us your inquiries.

Full report of Bureau of Standards tests will gladly be sent on request, together with a copy of our new catalog showing improved designs of truck wheels.



BETHLEHEM STEEL COMPANY

General Offices: BETHLEHEM, PA.

Sales Offices in the following Cities:

New York, Boston, Philadelphia, Baltimore, Washington, Atlanta, Pittsburgh, Buffalo, Cleveland, Cincinnati, Detroit, Chicago, St. Louis, San Francisco

BETHLEHEM

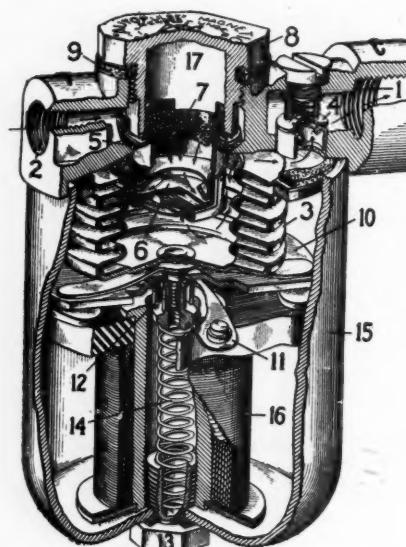
Rolled Steel Truck Wheels

Autopulse Magnetic Fuel Pumps

An electrically operated gasoline feed device, known as the Autopulse magnetic fuel pump, has been brought out by the Ireland & Matthews Mfg. Co., Detroit. Gasoline is drawn from the supply line and delivered to the carburetor by the pumping action of a brass bellows which is expanded by an electromagnet energized from the battery.

Referring to Fig. 1, the winding on the electromagnet 16 is connected to the ignition switch and consequently current flows through it as soon as the switch is closed. The armature 10 has a three point mounting consisting of three hardened steel balls, two below and one above, and is free to move up and down in a manner similar to a hinge. The center of the base of the bellows 3 is attached to the armature.

The pull exerted on the armature by the electromagnet causes it to move downward thus expanding the bellows. This



Cutaway Disclosing Mechanical and Electrical Construction

motion also compresses the helical spring 14. A pair of tungsten contacts are included in the electrical circuit. One of these can be seen at 11. This contact is mounted on a flat phosphor bronze spring attached to which is the steel sleeve 12. This sleeve projects part way into the electromagnet and is concentric with its axis. When the current flows, the magnetic action is on the sleeve, is such that it moves upward toward the armature thus stressing the spring 11 and increasing the pressure on the contacts. This occurs during the downward stroke of the armature. It prolongs the contact time and the release of the spring gives a more rapid break after the downward motion of the armature opens the circuit by separating the contacts. The cycle is completed by the upward motion of the armature caused by the spring 14 and the closure of the contacts. The stroke length is controlled by the action and set of the spring 11.

Gasoline is drawn into the pump by the expansion of the bellows. It enters

at 2 and passes through slots in the wall of the cap 8 under the chamber 17. It then passes through the screen 7 and enters the bellows through the spring controlled, monel metal valve 6. Discharge is through the automatic valve 4 and the outlet 1.

The output of the pump depends on the rate at which gasoline is withdrawn from the carburetor float chamber—in other words, the rate of fuel consumption. The force exerted by the spring 14 is not sufficient to compress the bellows and force gasoline into the float chamber when it is full. However, as soon as sufficient fuel is withdrawn to open the needle valve, the spring 14 compresses the bellows, thus discharging the fuel and closing the contacts. The pump then takes a suction stroke and pumping continues at greater or less capacity depending upon the needle valve opening. The Autopulse delivers gasoline to the carburetor only as needed and that, when it is not pumping, no current is withdrawn from the battery.

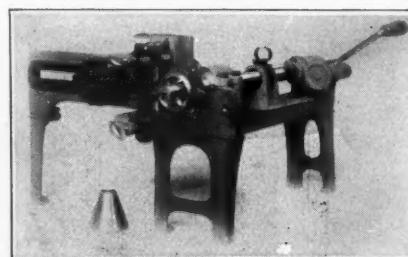
When pumping gasoline the stroke of the armature is from .025 to .030 in. and the maximum speed is from 800 to 1000 strokes per minute. About 5000 strokes are required to deliver a gallon of fuel. Assuming that the engine of the average car consumes gasoline at the rate of 1.5 gal. per hour, the pump would operate at an average speed of about 185 strokes per minute.

The current required by the Autopulse in making a stroke is said to be in the neighborhood of one ampere. However, due to the intermittent demand, the average current or meter reading is stated to be from $\frac{1}{4}$ to $\frac{1}{2}$ amp. when pumping at rated capacity. On a 6-v. battery the current consumption is given as 50 amp. hrs. per 1000 gal. delivered.

The life of the device is measured by the number of gallons pumped and laboratory tests indicate that it is capable of delivering from 10,000 to 20,000 gal. Few cars use more than 1000 gal. a year so the life of the unit is greater than that of the car. Wear of contacts and hearings causes a reduction in pressure and capacity but this is said not to exceed 10 per cent for 6000 gal.

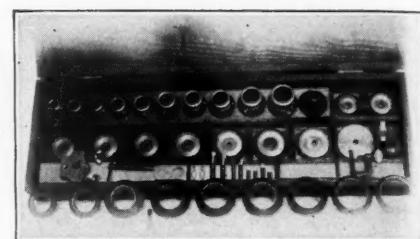
Green Connecting Rod Babbitter and Fitter

Jno. Green & Sons, Inc., 221-227 N. Market St., Hoopston, Ill., is offering a practical and complete machine for casting bearings in connecting rods. It will machine the bearings to any desired bore



The No. 2 Green Rebabbitting and Bearing Fitter

Note the centering cone on the floor. The boring bar is shown operated by the crank.



Case of equipment that accompanies the Green Rebabbitting Machine

It includes mandrels, centering cones, top and bottom flange plates, boring and filleting tools, aligning V block, etc.

and width. Split bronze back and other types of bearings can also be rebabbed and machined by this machine. It is known as the Green No. 2 Bearing Rebabbitting and Fitting Machine.

Simplicity of operation and construction is such that the average mechanic can rebabbi and fit any connecting rod bearing very quickly.

A feature of the machine lies in the fact that the babbitt is cast concentric with the bearing aperture. Accuracy is assured by means of machine finished babbetting mandrels and aperture centering cones. Being centered on the boring bar of the boring machine uniform thickness of the bearing is also assured.

The machine can also be used as a piston aligner by the addition of a special mandrel. The standard equipment accompanying the machine will take care of any rod up to 15 inches measured from center to center. Diameter range of bearings capable of being handled is from $1\frac{1}{4}$ in. to $2\frac{1}{2}$ in. The boring length is 6 inches. Special equipment if desired can be secured.

Manley Duplex Brake Relining Machine

The holes in the brake band are used as a template and countersinking is accomplished from underneath by reverse action by the new Manley Duplex Brake Relining Machine put out by the Manley Mfg. Co., York, Pa.

Countersinking is done by reversing the action of the drill head which brings the countersink in contact with the brake band from underneath. A guide pin is used on the countersink, which engages the hole drilled from above. This, it is stated, will insure a perfect alignment with the holes in the brake drum.

Construction is simple, consisting of a vertical shaft, carrying two horizontal arms operating in unison.

The price is \$32.50.



Manley Reliner



Jerked Into Jeopardy

A ROUGH, hard winter road—a rut—the steering wheel jerked from your grasp—a steep ditch! It all happens in an instant....But not with Ross Cam and Lever Steering Gears. With Ross it *can't* happen. Surer control and greater safety are among the many Ross advantages. *Write for the facts.*

At the Chicago Show—Space No. 1, North Hall Gallery

ROSS GEAR AND TOOL COMPANY, 760 Heath Street, Lafayette, Indiana

ROSS
CAM and LEVER STEERING GEARS

EASIER STEERING LESS ROAD SHOCK

Cab Review

(Continued from page 19)

SYRACUSE CAB No. 205

Syracuse Mfg. Co., Syracuse, Ind.

This cab is of the closed type and is standard in construction fitting on light commercial chassis. It is designed and constructed for hard service. The doors swing back and latch for warm weather driving. The windshield is full ventilating. A new steel cab for one ton Fords and Chevrolets will shortly be offered by this company. Its principal features are its solid back without roll-up curtain, left hand door opening directly beside the driver, non-rattling window designed to make signalling easy and a two section cushion to make the gas tank accessible.

HIGHLAND CAB MODEL D

The Highland Body Mfg. Co.
Cincinnati, Ohio

This cab is described as a universal unit. The doors are arm high and roll back into pockets beside the driver's seat, where they automatically lock. The windows slide and fold as they open and when not required are locked into the rear corner. The rear window is of the



Highland Cab

drop sash type. The windshield is of the clear vision, full ventilating type. Both sashes swing on heavy hinges. Seat cushions arranged in pairs, are of the deep, spring type. Built for strength the rear corner panels are of heavy steel and the sills, roof deck and dash are of oak. Quiet running and flexibility are claimed to be secured by the design. Built in three sizes, the cabs are adjustable to fit the chassis on which they are to be mounted and to make the seat accessible from either side.

AUBURN BUILT CAB

Auburn Wagon Co., Martinsburg, W. Va.

Entire framework is of hardwood. Wide drop sashes equipped with anti-rattlers are provided in both sliding doors and at the driver's seat. By reason of a special device the doors slide with ease and without rollers or hangers. A special door lock also retains the door in any position without jar or rattle. The windshield which is of the rain vision type contains plate glass and affords maximum vision. A

rear window is provided. Comfortable cushion and lazy back. The oak roof supports a one-piece Novasote top. Bolts are used entirely in the assembly of this cab.

SPRINGBORO CAB

Springboro Mfg. Co., Springboro, Pa.

Although designed for Ford and Chevrolet ton trucks the Springboro body can with a few adjustments be used on practically any one-ton job. It is of hard wood construction throughout, substantially ironed, bolted and screwed. The ventilating windshield and the sliding doors which are operated from the outside are easily adjusted. The doors are readily locked in any position by an eccentric clamp. The side sections contain swing windows and the doors drop sashes. The cushion, 18 x 38 x 4 in., is built on the two-piece spring construction, covered with imitation leather.

JOHNSTON CABS

Fort Smith Body Co., Fort Smith, Ark.

This cab is of the convertible type and is designed for commercial chassis of one ton capacity. It is furnished with either storm curtains or panel doors, open back with roll-up curtain, or solid back with sliding window. The platform is constructed of hardwood. The windshield is similarly constructed and is of the double-acting ventilating type. Firmly bowed the top is slatted over solid with wood strips, covered with oiled duck. The seat box which covers the gas tank has two side and one long tool box compartments. Spring cushions covered with imitation leather are provided. The panels are of sheet steel.

Why I Have to Stop Selling Trucks

(Continued from page 14)

list price. Pretty mess, I'll say and repeat as often as necessary.

"That last guy didn't beat me up but he licked me just the same. After telling me what he thought he just went around and told everyone of the customers what kind of a deal I had made with him and each of the others.

"A friend of mine who reads history says they used to pour hot lead in a man's ears to punish him. Say that was mild to the punishment that meek little list price guy handed me. Say if there was two votes cast here for dog catcher I would be arrested for repeating. I am telling the world in high-priced type that I am finished with selling trucks around here. If I had only thought about it sooner and played the game right I wouldn't be in this mess. But all I can do is quit, and quit out loud so everybody can see and hear me. Then maybe I can get back some of my garage and passenger car trade. But it will take quite awhile. 'List Price Bill' and a laugh is the nickname I suffer from now. But I'm cured.

"Missus wanted to go down town to a bargain sale today. I told her it would be about ten years before I would let her go near anything reduced. So long, John."

Racine Announces 1925 Series

The Racine Radiator Co., Racine, Wis., has just announced its new 1925 series of improved radiators for 1917-1923, and 1924 models.

The newest improvements relate particularly to the tanks. Both the top and bottom tanks are made entirely of one piece of heavy-gauge seamless drawn brass. Among the other improvements are:

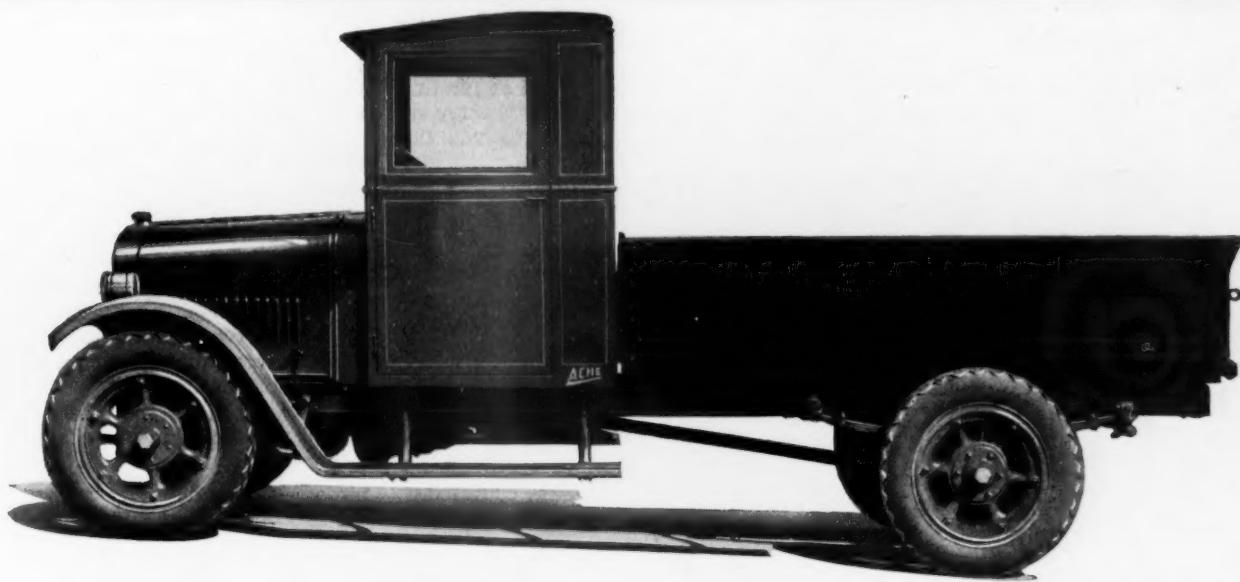
Top tank reinforced by longitudinal and lateral bracing ribs. Lower tank made with a curved bottom. This construction is said to distribute the water load in such a way that it cannot possibly crack or break the tank. The inlet casting is more securely fastened than before since 5 copper rivets are now used instead of 4. Appearance of the shell has been improved and a better fit between the shell and the radiator has been secured.

An improvement which will appeal to Ford owners is the all-bronze core in which the wide, straight water channels are made up of one piece of bronze, the only joint which is on the motor side, being double locked-seamed and carefully soldered inside and out. No amount of freezing can damage this core. The bronze serating wings carefully soldered between water channels, provide extra radiating surface without affording a place for dust and mud to collect. A patented spring bracket suspension holds the radiator firmly in place and at the same time relieves it from all strain due to twisting or weaving of the chassis.



Black & Decker No. 3 Reversible Socket Wrench

The Black & Decker Mfg. Co., Towson, Maryland, recently put on the market its No. 3 Reversible Electric Socket Wrench which is particularly adapted to assembling and disassembling engines. This machine is essentially the same in construction and design as the company's portable electric drills except that the spindle is provided with a clutch which automatically releases when the forward pressure on the tool is relieved. Due to the design of this clutch, a nut, bolt or stud can be driven to any desired tightness. A reversing switch is provided for use in disassembling. The wrench has ample power to kick loose tight nuts or bolts and is equipped with a quick-change chuck for holding the different size socket wrenches. This machine equipped with spade handle, side handle and 15 feet of electric cable, sells at \$103.



The BIG Message of the Acme Franchise

We consider it worth money to dealers to tell them that the right time for investigating the Acme proposition is NOW! For now the Acme Flyer, a long-life, high-speed truck, is solving the light delivery situation to the DEALER'S PROFIT! *National Prosperity is Yours, Too, with Acme.*

The biggest need of transportation has been met by the Acme Flyer. And the great need of the dealer for bigger profit at practically the same overhead and selling effort is met by the Acme Line. National prosperity has come back, bigger than ever. The Acme Franchise is waiting for the dealer who means to make NOW the big word of his 1925 sales campaign.

Do you know the character of the Acme Franchise, by the way? It is a document of co-operation between Acme and the dealer that usually makes an association with the Acme Motor Truck Company long, friendly and profitable.

Write us—NOW—and learn more about our proposition to you. You will find it better than you believed possible.

ACME MOTOR TRUCK COMPANY
608 MITCHELL STREET CADILLAC, MICHIGAN

the NEW

ACME FLYER

Nine Other Acme Models for Every

Trade-Mark Registered



Type of Industrial Transportation

U. S. and Other Countries

"Time" Sales Methods Important

(Continued from page 16)

termining this important part of the time sale plan.

The fourth method of calculating interest, which in reality is merely a combination of two of those previously presented, is to make all the notes including interest exactly equal, but instead of calculating the amount as in the first method or using the unfair \$180 figure, the smaller and correct figure of \$120 is divided into fifteen parts, each added to the base value of \$200.

This practice divides the risk of loss in repossession of the truck equally between dealer and purchaser—at least insofar as this part of the problem is concerned—and makes the entire transaction easily remembered.

And it is often no easy matter to keep the exact amounts of notes in mind, particularly when the totals instead of being the even figures we have taken for illustration are fractional amounts due to the initial price being an odd figure, but whatever the figures the methods of calculation are the same and the amounts can be determined by the purchaser in the manner outlined above.

Finance Charges

Finance companies often find it necessary to make an extra charge, usually called "finance charge," to cover the cost of handling the account. This amount pays for the cost of handling the account as a matter of bookkeeping, collecting, recording, etc.

It seems that in the past truck purchaser have been inclined to look upon the finance charge as an amount which they should not feel called upon to pay. The writer feels that this has been due more to misunderstanding between the finance company and the purchaser than to anything else, for it is often difficult to explain the complicated operations of banking practice to the purchaser. Yet this charge is entirely legitimate provided, of course, that the figure is not excessive.

Insurance Charges

As mentioned before, the dealer must naturally protect himself against loss due to damage or accident to the truck itself during the "time" payment period. For this reason adequate insurance must be carried, either by the purchaser or preferably by the dealer, since he is in a better position to know insurance requirements. On the other hand, the purchaser need feel that any advantage will be taken of him in case of accident, for insurance companies always clearly define the joint interests of dealer and purchaser before paying any claim.

Another point where the purchaser may gain in having the dealer carry the insurance, is that unless he is operating a fairly large fleet of trucks the dealer can usually secure the necessary insurance at a lower rate, due to the larger amount of business handled and the fact that his business standing is established with the insurance company.

Usually insurance is charged as a separate item and is paid for on a partial payment basis along with the chassis, but in some instances the dealer must pay the insurance company in full at the time the sale is made, hence he is rightfully entitled to ask the buyer to include this amount in the initial payment.

Who Owns the Truck During the "Time" Payment Period?

The question of title or ownership of the motor truck involved in a "time" sale is often a puzzling one, not only to the purchaser but to the dealer as well. Under ordinary conditions title to property does not pass until it is paid for in full, but certain states have enacted special conditional sales laws which very clearly protect the interests of both dealer and purchaser at all times. In other states the legal requirements are still somewhat confused.

For these reasons the dealer, and oftentimes the purchaser, should feel free to call upon competent legal advise applicable within the territory wherein the sale is made.

It is obviously impossible to consider the various legal requirements at this time, but the writer knows that unless both parties clearly understand the restrictions under which sales of this kind are made, there is likely to be no little dissatisfaction should any trouble arise during the time that the truck is being bought.

A clear understanding of the rights of dealer and purchaser undoubtedly goes a long way towards not only mutual satisfaction, but also towards an understanding of the difficulties in securing state operating licenses and other details coming under the jurisdiction of the state laws themselves.

Taxes, Freight, Extras, Etc.

In most every sale there are certain extras, such as taxes, freight, minor equipment, etc., to be included in the purchase price. This is also true when a truck is bought complete with body. Some dealers in determining the amount of the initial payment merely add these extras to the basic truck price and then take a given percentage of the grand total for the amount of the initial payment. Others insist upon receiving the total included in extras as a direct part of the initial payment, and add their cost to the original amount of the "down" payment, were they not included.

Whatever may be the practice in disposing of these items the truck purchaser should thoroughly understand how they are disposed of when he concludes the transaction. The exact procedure to be followed is determined by the nature of the item itself—whether or not it must be paid for by the dealer in cash (in which case the purchaser would be expected to pay for it as a part of the "down" payment), or whether the dealer is in a position to extend the same credit on the extras as on the truck itself.

Size of Notes and Length of "Time" Payment Period

Obviously, the sooner the truck is paid for the sooner will the purchaser begin to make money and the dealer receive the capital which he has in reality loaned the

purchaser. For this reason the "time" payment period should be as short as possible, but on the other hand there is a fundamental principle too often overlooked by dealers and finance companies when concluding a "time" sale.

Unless the purchaser is in a position to receive payment for the operation of the truck at a greater rate than the amount required for its operation and the payment of the notes themselves, trouble is eventually bound to ensue.

Under present-day competitive operating conditions, purchasers are often placed in a very disadvantageous position, usually several months after the truck has been placed in operation.

The writer feels that there is a great deal yet to be done in helping the purchaser pay for his truck. This may seem like placing too much of the burden upon the dealer, but on the other hand the dealer's success depends upon his receiving payment, and the purchaser's success depends upon his ability to make money with his truck. Both conditions involve business considerations, and the dealer is oftentimes more familiar with business practices, together with truck operating costs, than the purchaser.

This is not always true, for many truck fleet owners are very familiar with costs involved in motor vehicle operation, but they, if they purchase trucks on a "time" sales basis, are seldom placed in an uncompromising position due chiefly to their knowledge of business practice and operating costs.

But the notes covering monthly payments must not be too small, for if they are they bring into consideration another factor which must not be overlooked. This also is fundamental business principle.

If the rate of depreciation of the truck is greater than the amounts paid in on it at any particular time during the conditional sale period, the dealer may be placed at a disadvantage since if he must repossess the truck it is extremely difficult for him to resell it except at a net loss, even though he may seemingly have received more money from the initial purchaser than the value of the truck itself.

Fundamentally speaking, the rate of depreciation must always be less than the rate at which payment is made, so that the purchaser's interest in the unit will be continuous since he will be receiving something of greater intrinsic value than the amounts which he has paid represent.

The principle involved in the depreciation rate has an important bearing upon the dealer's standing with the finance company or his bank, for his assets on credit to the customer always should be equal to or greater than the actual amounts themselves which are outstanding.

In such cases should repossession of the vehicle be necessary at any time, he is always able to resell the unit without loss.

Dealer good will and customer confidence are based upon mutual understanding. By presenting the facts to the purchaser and being certain that he understands them, the dealer can assure himself of continuous satisfaction in selling trucks on time.

FEBRUARY 15, 1925

THE COMMERCIAL CAR JOURNAL

3

THE COMMERCIAL CAR JOURNAL

Entered as second-class matter at the Post Office at Philadelphia, Pa.
under the act of March 3, 1879

VOL. XXVIII PHILADELPHIA, FEB. 15, 1925 No. 6

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Published the 15th of each month by the

CHILTON COMPANY

Chestnut and 56th Streets

Philadelphia, U. S. A.

C. A. MUSSelman, President J. S. HILDRETH, Vice-Pres. and Director of Sales
A. H. VAUX, Sec'y and Ass't Treas. H. J. REDFIELD, Treasurer

Owned by United Publishers Corporation, 239 West 39th Street, New York;
CHARLES G. PHILLIPS, President; A. C. PEARSON, Vice-President;
FRITZ J. FRANK, Treasurer; H. J. REDFIELD, Secretary.

Telephone.....Sherwood 1424, Philadelphia

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SUBSCRIPTION RATES

United States and Possessions	\$2.00
Canada	3.00
Foreign	4.00

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Ford Type, Nickel-Plated

The New Price

\$12⁰⁰

The new price of the Ohmer Hub-Odometer for Ford cars is \$12. This announcement should prove highly interesting to operators of Rent-A-Ford Stations and owners of Ford Fleets.

All Features Retained

This is the same Ohmer Hub-Odometer that formerly sold for \$15. Increased production and widespread acceptance by fleet owners has made this price reduction possible. This Ohmer Hub-Odometer is nickel-plated, very attractive in appearance, sturdy of construction—and matches the other hub caps perfectly. The figures *always* read right side up. It is trouble-free in operation. It keeps an accurate account of mileage and furnishes a positive check on every car.

Revised Price List of Ohmer Hub-Odometers

Nickel-plated type for Ford passenger cars	.....	\$12.00
Plain type for Ford trucks	.....	12.00
Nickel-plated type for Chevrolet, Overland, Star cars	.....	15.00
Truck type for Chevrolet, Overland, Star trucks	.....	15.00
Either type for any other cars or trucks	.....	20.00

Write for Facts

Ohmer Hub-Odometers are satisfactory for all types of trucks and cars.

Just sign and mail the coupon at once. We will point out how the Ohmer Hub-Odometer will both make and save money for you.

The Ohmer Hub-Odometer is backed by the Ohmer Fare Register Company—makers of accurate recording devices for 26 years and with service stations everywhere.

OHMER FARE REGISTER COMPANY

DEPT. C DAYTON, OHIO, U. S. A.

OHMER
HUB ODOMETER

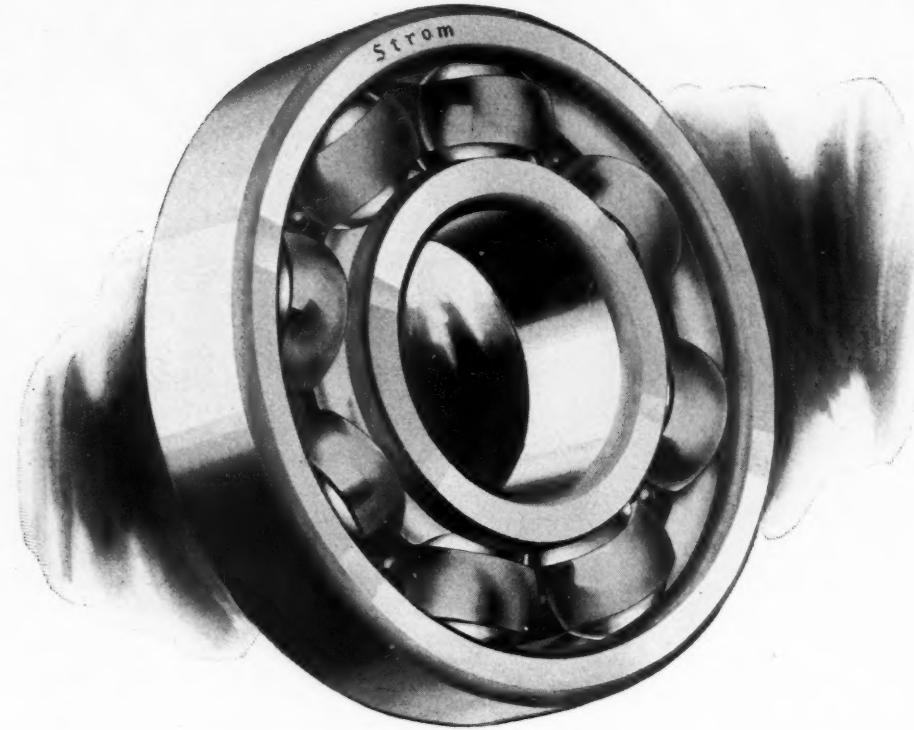
Ohmer Fare Register Co.
Dept. C Dayton, Ohio

Gentlemen: Please send me full descriptive matter and prices of the new Ohmer Hub-Odometer. This does not obligate me in any way.

Name

Address

The New Super-Strom



A super-ball bearing of exceptional accuracy and load-carrying capacity

UPON request we will send you a booklet describing the new Super-Strom ball bearing—giving dimensions and load-carrying capacities. It is important data, because this new ball bearing is a *development of real importance*.

It is of the deep-groove type—without filling slots, offering 17% to 38% increased load-carrying capacity, by use of more or larger balls, according to size of bearing.

Minimum eccentricities and tolerances—utmost dimensional accuracy. Sturdy retainers, accurately pressed, rigidly riveted, form broad, spherical ball pockets. Special analysis steel—of exceptional durability by improved forging and heat treating methods.

Now available in quantity production—and a point to remember is that our engineers will be glad to assist in solving your bearing problems.

Tear off lower part of this advertisement and pin it to your letterhead. We'll mail at once this important booklet on the new Super-Strom ball bearing.

Strom BALL BEARINGS

STROM BALL BEARING MFG. CO., 4542 PALMER STREET, CHICAGO, ILLINOIS



Name..... Position.....